MacWEEK

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This week in Reviews

NetWare for Macintosh 3.0

ColorStudio 1.5

Minitab Release 8

See Page 45

PowerBook, Quadra designs mean trade-offs for users

Quadra buyers face compatibility issues

By Andrew Gore

Cupertino, Calif. — Next week's debut of the Quadra 700 and 900 will demonstrate exactly what a delicate balancing act is required to give Macintosh performance a significant boost while maintaining compatibility with the majority of existing Mac products.

Thanks to the Quadras' 68040 processors, faster SCSI controllers

See Quadras, Page 102

PowerBook RAM to be scarce, pricey

By Raines Cohen and Henry Norr

San Francisco — Users of Apple's new PowerBooks will find add-on memory scarce and expensive for months to come, developers said.

All three of the laptops to be announced at next week's Comdex/Fall '91 show in Las Vegas will come with 2 Mbytes soldered on their logic boards, and the PowerBook 170 will ship with an additional 2 Mbytes installed. Because System 7.0.1, which the machines require, typically con-

See PowerBooks, Page 103

ILLUSTRATIONS BY KEVIN BERGER

Ashlar propels Vellum into 3-D

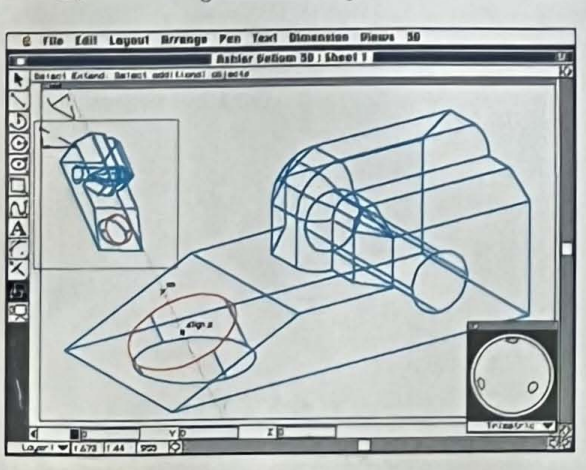
By Rochelle Garner

Sunnyvale, Calif. — Ashlar Inc. is preparing a version of its Vellum CAD application that enthusiastic users say makes precise 3-D design as easy as sketching.

Due in November, Vellum 3D is a stand-alone application that builds on the original 2-D version, called Vellum, and its groundbreaking Drafting Assistant interface, which provides instant feedback on the cursor's position relative to on-screen objects.

"With [CAD], it's important that the computer be precise, so the user doesn't have to be," said Bruce Tognazzini, Apple's human interface evangelist. "With Vellum 3D,

See Vellum, Page 104



The Z-Drafting Assistant in Vellum 3D helps users precisely place and align lines, circles and other primitives in 3-D. With the on-screen trackball, seen at lower right, users can rotate models in real time.

Taligent plays on Personalities

By Andrew Gore

Cupertino, Calif. — Last week's Apple/IBM Corp. announcements may have redefined the future of corporate computing, but many information-systems managers were left confused about just what it all means.

"All this stuff is very interesting, but there aren't enough solid facts for us to make sense of it," said Tom Mullaney, manager of systems and administration for ARCO Products Co. in Los Angeles. "We know that something's coming and that it's big, but the information about what it is and how it'll work is vague and contradictory."

Ed Birss, senior vice president of Apple's object-based systems division and expected future chief operating officer of Taligent Inc., last week helped untangle parts of the puzzle in an interview with MacWEEK.

In particular, Mullaney and other corporate managers said they were uncertain about how the new Taligent object-based operating system will work with their current software and what it will offer that they don't have now.

Their first concern, they said, is protecting their current software investments.

▶ **Personalities.** Apple and IBM, Birss said, will address the problem through a special set of Taligent objects called Personalities. The objects, running under the Taligent OS, will provide full emulations of other operating systems.

"We want to make sure that customers who have invested in a suite of application programs can protect their investment when they move to the Taligent platform," Birss said. "Let's assume that a customer currently uses a Mac. They will be able to buy a Personality that will allow all their Mac software to run under

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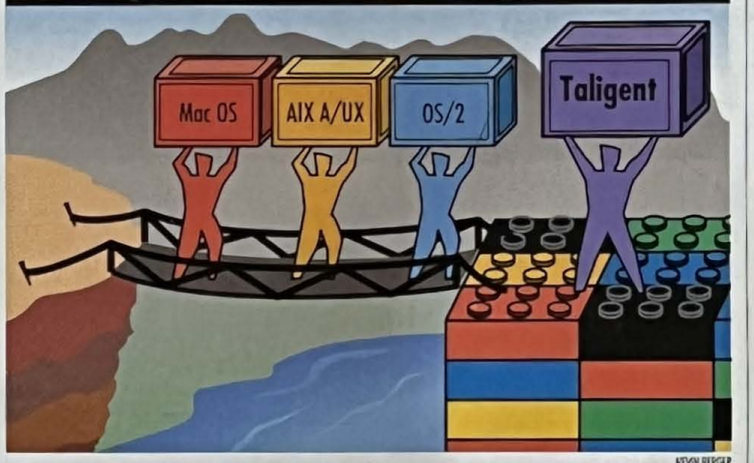
Making the transition to Taligent



KEVIN BERGER

Nets to dial into telecom future

By Mitch Ratcliffe

San Jose, Calif. — InterOp '91 attendees last week saw the future of wide-area networking and it was their telephones.

In just two or three years, highly versatile and high-speed digital communications will be available, mainly via the public telephone networks. And this is what held center stage at InterOp. Enthusiasm for digital communications was running high, fueled by last Monday's court decision allowing regional Bell operating companies to offer information services (see story, Page 99).

Apple used InterOp as a springboard into the digital communica-

See Interop, Page 104

New horizons for networking

Apple, Microsoft to outline strategies

By Margie Wylie

Dallas — If Microsoft Corp. and the Apple/IBM Corp. gang have their way, operating systems and networking software will be indistinguishable in a few years.

Both camps will be out in force at NetWorld '91, the semiannual networking show here this week, preaching that the future of connectivity lies not in traditional networking software, but in their upcoming operating systems.

"Windows/NT and LAN Manager eventually will converge, and when that happens there will be no dividing line between network services and the operating system," said Mike Murray, general manager for Microsoft's network business unit.

Like Pink, the portable operating system kernel due from Apple and IBM, Microsoft's NT kernel will let a graphical operating system, in this case Windows, run on many different platforms.

Microsoft will fold network capabilities, such as electronic mail, global directory, management, and file and print services, into Windows as it prepares the system to run on top of the NT kernel, which is due sometime next year, Murray said.

Taligent, Apple and IBM's joint OS venture, may still be three years from producing its portable kernel. But System 7.0 already has built-in file and print services and will soon have management, E-mail and directory services, which Windows still lacks.

See NetWorld, Page 102

NEWSPAPER SECOND CLASS

Proof that Abaton's color scanner can make anything look attractive.

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Seiko raises thermal-wax ante with low-cost PostScript printer

By Neil McManus

San Jose, Calif. — Seiko Instruments USA Inc. next month will shake up the printer market with the release of the first PostScript-compatible color thermal-wax transfer printer to retail for $2,000 less than most of its competitors.

To be unveiled next week at Comdex/Fall '91, Seiko's $4,999 Personal ColorPoint PS offers a resolution of 300 dpi on plain paper. The printer is built around a 16-MHz Intel 80960 RISC (reduced instruction set computing) processor. It comes standard with 6 Mbytes of RAM, expandable to 22 Mbytes, and 39 Type 1 fonts.

The Seiko printer uses the PhoenixPage PostScript-compatible interpreter from Phoenix Technologies of Norwell, Mass.

The printer also includes HP-GL 7475A emulation in ROM.

The Personal ColorPoint PS offers automatic switching among its AppleTalk, RS-232 serial and Centronics parallel ports. An optional SCSI port is available for an additional $499.

The printer accepts a variety of paper sizes, including letter, legal, A4, B4 and postcard. It prints on both cut-sheet plain paper and transparencies.

The Seiko printer will compete against printers such as Mobile, Ala.-based QMS Inc.'s ColorScript 100 Model 10p, a 300-dpi thermal-transfer printer that retails for $6,995. The QMS printer uses Adobe PostScript and comes with 4 Mbytes of RAM.

"Seiko is getting very aggressive in its pricing," said Bill Gott, senior industry analyst at InfoCorp of Santa Clara, Calif. Gott said InfoCorp predicts plummeting prices will help U.S. sales of color thermal printers to increase from 37,000 units in 1990 to 45,000 in 1991 to 57,000 units in 1992.

In addition to the new PostScript-compatible model, Seiko recently started shipping the Personal ColorPoint, a non-PostScript thermal-wax transfer printer.

This 300-dpi printer retails for $4,598 with a QuickDraw driver and a parallel interface on a NuBus card for connection to the Mac.

Seiko Instruments USA Inc.'s Graphic Devices and Systems Division is at 1130 Ringwood Court, San Jose, Calif. 95131. Phone (408) 922-5800; fax (408) 922-5840. □

Paracomp merger with MacroMind nears completion

By Andrew Gore

San Francisco — The merger slated to create the largest Macintosh multimedia developer was all but completed last week.

MacroMind Inc., developer of MacroMind Director and MediaMaker, and Paracomp Inc., which offers Swivel 3D Professional and Filmmaker, are already pooling their forces as the formalities of the merger are completed.

"We started combining business operations [last] week," said Tim Mott, president and CEO of the combined company to be called MacroMind/Paracomp Inc. "We just finished moving all the Paracomp people into our new building. All the business issues have been covered.

"Now we're just waiting for approval from the state, and we don't expect any problems with that," Mott said.

The two companies last week finished cost-cutting measures related to the merger, primarily involving the layoffs of employees performing similar jobs.

"We've made all the cuts we have planned," Mott said.

The combined company will have about 90 employees. According to Mott, it will continue the two companies' efforts to supply multimedia products across Mac, Windows and Unix platforms.

MacroMind/Paracomp Inc.'s new offices are at 600 Townsend St., San Francisco, Calif. 94103. Phone (415) 442-0200; fax (415) 442-0190. □

Apples work it out in Beatles lawsuit

By Carolyn Said

San Francisco — At least they won't have to change the name to Banana Computer.

Apple and Apple Corps, the Beatles' management company, have reached an agreement over Apple Corps' 1989 lawsuit against the computer maker. The suit charged Apple with violating a 1981 agreement not to use its logo on music-related products.

Apple reportedly will pay the British Apple an amount somewhat less than the $30 million it set aside last quarter to cover pending litigation. The High Court in London, which had been hearing the suit since February, agreed to dismiss the case.

"The Beatles are very pleased with the outcome," said Wayne Cooper, a San Francisco attorney representing Apple Corps. "Now that the case is at long last over, everyone involved can get back to things they'd rather do. It's been, as they say, a long and winding road." □

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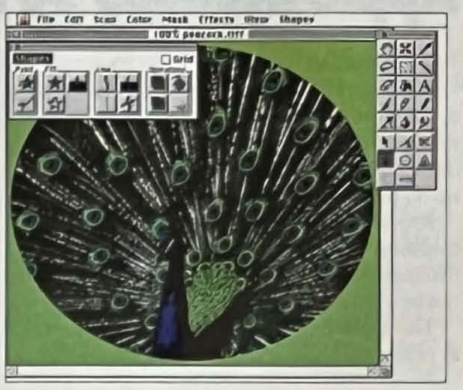

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Apple licenses Soviet cursive-handwriting technology

By Raines Cohen

Boulder, Colo. — Although Apple has yet to enter the growing pen-based computer market, last week it acquired some Soviet-developed technology that should give it a leg up on the competition.

Apple licensed handwriting-recognition routines and algorithms developed by Moscow-based ParaGraph JV, a 2-year-old Soviet-American joint venture.

The software can recognize cursive as well as printed and block handwriting. It provides a foundation for recognition of formulas, symbols and simple graphics, as well as optical character recognition and fax file and scanned handwriting recognition.

Other pen-based systems announced to date are limited to block-letter, writer-dependent recognition.

ParaGraph International, the exclusive distributor of JV technology based here, announced the agreement, which reportedly is the first commercially significant technology exchange from the Soviet Union to a major U.S. computer company.

The agreement gives Apple access to the technology for installation on current and future Mac operating systems.

Apple did not comment on how it plans to use the software.

Under development since 1989, the software originally was created through another joint venture affiliated with two departments of the Soviet Academy of Science.

Apple Japan already offers MacHandwriter, a handwriting-recognition input device that lets Macs read Japanese printed characters, using software co-developed by Redwood Shores, Calif.-based Communication Intelligence Corp. (see MacWEEK, Sept. 17). □

Developers can now get Serius with Apple events

By Matthew Rothenberg

Salt Lake City — Serius Corp. this week released AppEvent Object, a programming object that promises Macintosh developers an easy route to support for System 7.0's Apple events.

Available now for $49.95, AppEvent Object is designed for use under System 7.0 with the Serius Programmer and Serius Developer object-oriented programming environments.

The new object can send and receive core Apple events, according to Serius, and allows developers to define their own events and subscribe to the events of other programs.

In addition, AppEvent can send and receive arbitrary objects from the Serius Object Library, which includes 45 prefabricated components, such as file transfer and page-layout objects.

Developers can use Serius' object-oriented programming environment to add support for Apple events, even if they do not understand how the events are implemented within their application's code, the company said.

Serius said it will introduce additional objects that implement other System 7.0 features in the next few months.

Serius Corp. is at 1981 East 4800 South, Salt Lake City, Utah 84117. Phone (801) 272-7788; fax (801) 277-2440. □

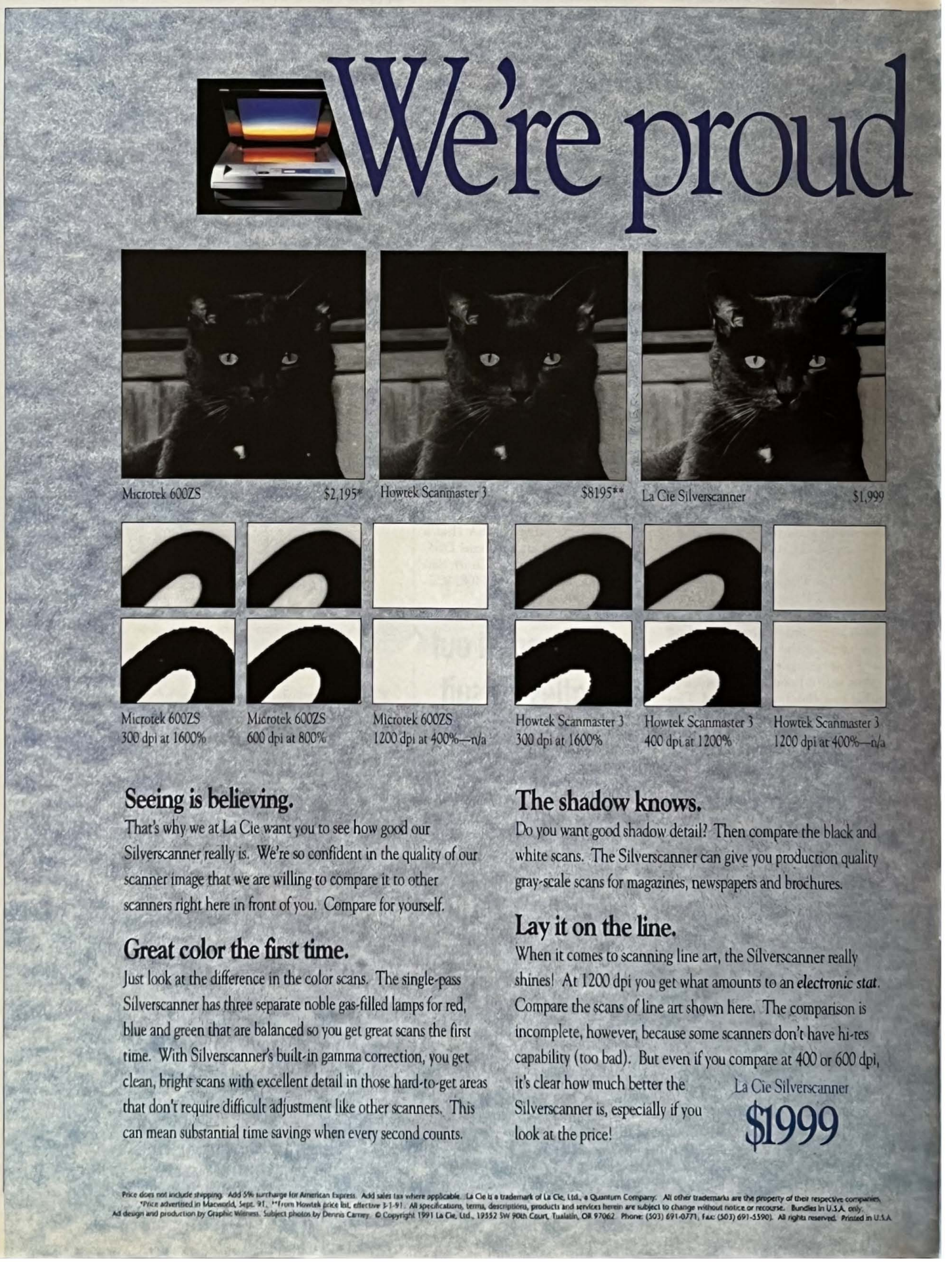
Mass Micro ships Rival line of big-screen displays

Sunnyvale, Calif. — Mass Microsystems Inc. recently started shipping 19-inch monochrome, gray-scale and color display systems it picked up with the acquisition of MegaGraphics Inc. in August.

Called the Rival series, the display systems include a 19-inch monitor and a graphics board. All Rival systems offer a resolution of 1,024 by 826 pixels at 75 dpi and have tilt-and-swivel bases built in. The line includes:

- **Monochrome.** Retailing for $1,698, this system is available for the Mac SE/30, LC, SE and NuBus-based Macs.
- **Gray scale.** This system, which offers 256 levels of gray, is available for NuBus-based Macs for $2,548 and for the SE/30 for $2,598.
- **Color.** This eight-bit system, which includes a Sony Trinitron monitor, is offered for NuBus-based Macs and the SE/30 for $5,948 and $5,998, respectively.

Mass Microsystems Inc. is at 810 W. Maude Ave., Sunnyvale, Calif. 94086. Phone (408) 522-1200; fax (408) 733-5499. □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Lay it on the line.
When it comes to scanning line art, the Silverscanner really shines! At 1200 dpi you get what amounts to an electronic stat. Compare the scans of line art shown here. The comparison is incomplete, however, because some scanners don't have hi-res capability (too bad). But even if you compare at 400 or 600 dpi, it's clear how much better the Silverscanner is, especially if you look at the price!
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Intertie to keep two Macs on track

By Andrew Gore

Berkeley, Calif. — Dantz Development Corp., developer of the Retrospect backup utility, reportedly is readying a new program designed to help users make sure they always have the most current versions of files they use on both desktop and laptop Macintoshes.

Called Intertie, the program will be introduced next week at Comdex/Fall '91 in Las Vegas, alongside Apple's new PowerBooks. It is expected to ship by the end of the year at a price of $149, according to sources.

Users who already have Macs on their desktops are likely to be first in line for PowerBooks, and they probably will install many of the same applications and data files on their notebooks that they have on their desktop Macs.

The problem is that changes made to files on PowerBooks while on the road, such as contact databases, won't be reflected in desktop versions of the file; users will have to remember to replace the obsolete file manually with the updated version to guarantee that both machines have the most up-to-date information.

Intertie is intended to solve that problem. Building on technology developed for Dantz's Retrospect Remote network backup software, it will automatically replace older versions of files with the most current revision. All users will have to do is connect their PowerBook to the network, and Intertie will update selected files.

The program also will synchronize file versions over the SCSI bus to a hard drive or a PowerBook 100 operating as a hard disk.

Intertie is compatible with both System 7.0 and System 6. It supports file sharing and access privileges, balloon help and virtual memory.

Dantz Development Corp. is at 1400 Shattuck Ave., Suite 1, Berkeley, Calif. 94709. Phone (510) 849-0293; fax (510) 849-1708. □

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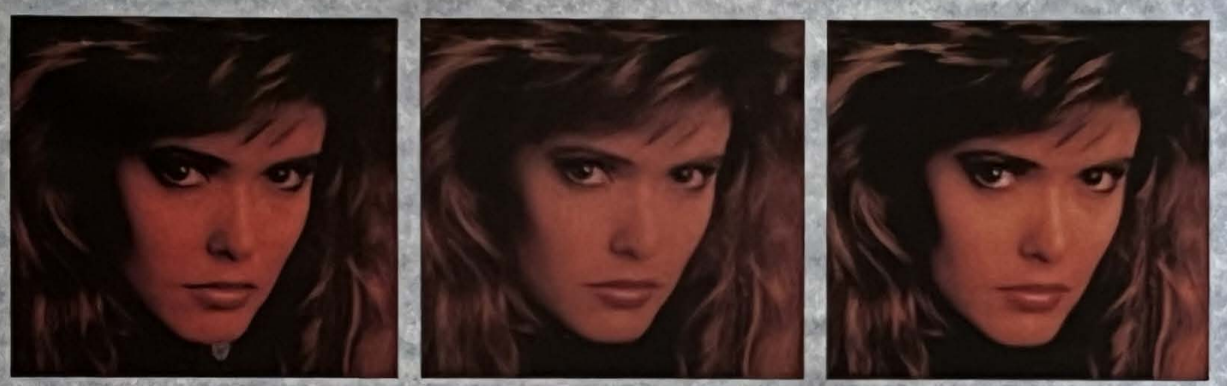
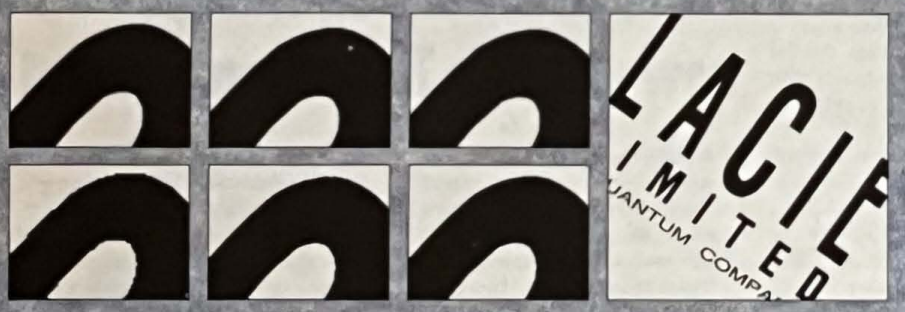


Microtek 600ZS $2,195* Howtek Scanmaster 3 $8195** La Cie Silverscanner $1,999



La Cie Silverscanner 300 dpi at 1600% La Cie Silverscanner 600 dpi at800% La Cie Silverscanner 1200 dpi at 400% La Cie Silverscanner 1200 dpi at 100%

All scans were done at default settings with no corrections. The color images were separated using Adobe Photoshop. The logo was scanned as grayscale and as line art. This entire ad was done on the Macintosh using Silverscanner, Photoshop, Quark XPress and a PostScript Imagesetter. The entire production cost was $145.

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Macworld, June 1991

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HP readies big drives to go inside Quadra 900

By Carolyn Said

Palo Alto, Calif. — Hewlett-Packard Co., having captured a substantial share of the Mac printer and scanner markets, is hoping to repeat its success in the storage arena.

The company reportedly next week will announce four high-capacity SCSI-2 internal disk drives for the Quadra 900, two with capacities of more than 1 Gbyte.

The family will include full-height 5.25-inch mechanisms with average seek times of 13.5 milliseconds and formatted capacities of 1.35 Gbytes ($5,095), 1.07 Gbytes ($4,545) and 677 Mbytes ($3,395). A 3.5-inch drive, priced at $2,695, will have a capacity of 422 Mbytes and an average seek time of 12.6 milliseconds. All four units have an MTBF (mean time between failure) rating of more than 150,000 hours.

Due Nov. 1, the drives will ship with software, cables and trays to facilitate installation.

The Quadra products will be HP's second storage offering for the Mac in recent months. In August the company unveiled a 14-inch cabinet that can be fitted with up to seven SCSI devices, including hard drives and rewriteable optical, CD-ROM or digital audio tape mechanisms (see MacWEEK, Sept. 17).

Hewlett-Packard Co. is at 19310 Pruneridge Ave., Cupertino, Calif. 95014. Phone (800) 752-0900. □

PLI first to ship new Sony 3.5" opticals

Fremont, Calif. — PLI Inc. this month became the first vendor to announce shipments of drives with a 3.5-inch Sony magneto-optical mechanism, but supplies of the new technology remain tightly limited.

PLI, one of at least half a dozen Mac vendors that have adopted the Sony technology, said it has shipped "a small number" of its $2,199 Infinity Optical 3.5" drive and is waiting for more mechanisms from the manufacturer.

The Sony drive uses 3.5-inch erasable-optical drives with a capacity of 128 Mbytes but also can read O-ROM disks, a new CD-ROM-like read-only optical format.

The drive has an average seek time of 40 milliseconds, a rotational speed of 3,000 rpm and a sustained data transfer rate of 625 Kbytes per second. It has external SCSI ID and termination switches.

PLI Inc. is at 47421 Bayside Parkway, Fremont, Calif. 94538. Phone (510) 657-2211 or (800) 288-8754; fax (510) 683-9713. □

Pilot ushers in new EIS strategy

Offers host, LAN access to data

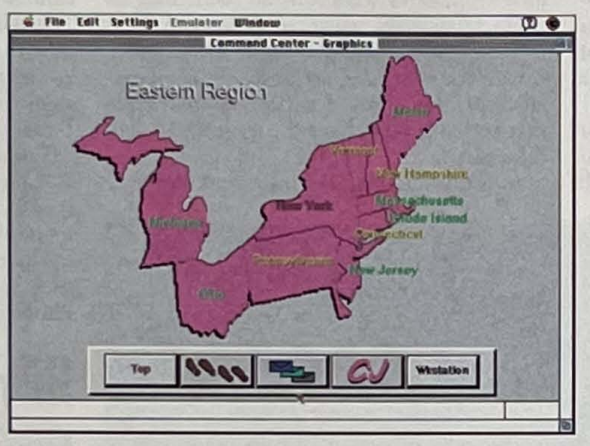
By Rochelle Garner

Boston — Pilot Executive Software, a heavyweight provider of turnkey executive information systems, last month unveiled a range of cooperative-processing and client-server products for the Mac, Windows-using IBM PCs and compatibles, and LANs.

The three new products are:

▸ **Command Center 4A.** Available for Windows 3.0 and the Mac, the new 4A version of Command Center uses the cooperative-processing approach to computing, in which most of the computing occurs on the host system. The software comprises two components. The host software supports IBM Corp.'s VM/CMS and MVS/TSO, Digital Equipment Corp.'s VAX/VMS, Hewlett-Packard Co.'s HP-UX Unix, AT&T Co.'s Unix, and Santa Cruz Operation's Unix. The graphical front-end software runs on either Windows or the Mac.

According to Pilot, executive information system applications can be created and used across environments. Either package can access Oracle under VM/CMS and Sybase under VAX/VMS in real time, Pilot said.



The Mac client component of Pilot's Command Center 4A acts as a graphical front end to executive information systems running on hosts. Applications written either on Macs or Windows 3.0 have the same on-screen appearance, according to Pilot.

Due in the fourth quarter, Command Center will cost $20,000 to $150,000, depending on configuration and platform.

▸ **Pilot EIS for LANs.** Running on any LAN supported by Windows 3.0, the new system offers "the first open-architecture EIS for LANs," according to the company. The client-server system, which does not require a host, comprises three components.

LightShip, the system's front end, is a Windows EIS client. LightShip Lens, which acts as the middle layer, uses Windows' Dynamic Data Exchange (DDE) to access data from a variety of sources on the net. It will then load data into the client PC's RAM cache, allowing users to view information in a variety of ways. Finally, the back-end server, called TimeBase, is Pilot's database especially geared to viewing data trends over time. A $40,000 starter kit for Pilot EIS for LANs includes 15-user and three-developer licenses. It is due late this year.

"Pilot's Mac [Command Center 4A] is very different from LightShip on Windows," said Cliff Conneighton, vice president of office information systems with the Gartner Group, a market research company in Stamford, Conn. "The Mac product is a front end to a server-based system, while LightShip is a bottom-up implementation of a product that can stand alone and reach out to data on LANs, mainframes or any host."

▸ **FCS 3.0.** Available now, Pilot's FCS (financial control system) decision support system software resides on the customer's mainframe. FCS calculates all financial data on the host, sharing data and variables with Pilot's other client software, including Command Center 4A. It costs $50,000 to $100,000, depending on platform and configuration. The company also offers FCS for LANs, a decision support system engine for Pilot EIS for LANs, priced at $1,295.

Pilot Executive Software is at 40 Broad St., Boston, Mass. 02109. Phone (617) 350-7035; fax (617) 695-1265. □

Pastel hopes to make users' day with personal organization tool

By Dartanyan L. Brown

New York — Pastel Development Corp. last week began shipping DayMaker, its long-awaited personal organization tool.

Priced at $99.95, the application tracks appointments and scheduling, to-do lists, notes, categories and priorities, and name and address information.

DayMaker allows users to organize and view personal information through a variety of predefined and user-defined views (see MacWEEK, July 31, 1990, and Aug. 13).

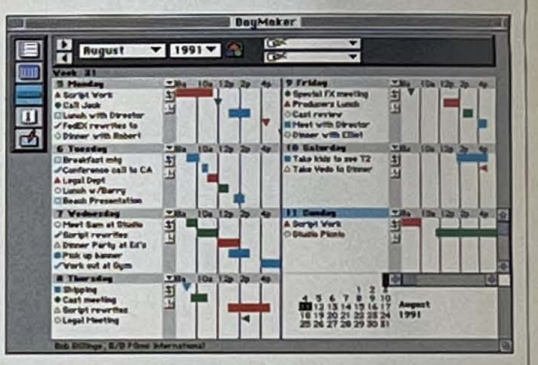
"I can quickly create a calendar with separate views of both business and personal information," said Paul Bandrowski, senior advanced technology analyst at Sara Lee Corp. in Chicago. "One of its major advantages is the unlimited search capability. I can use any keyword to find what I'm looking for."

DayMaker supplies a full range of time- and project-management tools, including alarms, reminders, Gantt charts and extensive calendar output.

"The ability to see hierarchical classification of items is very nice," said Clark Roberts, Mac support coordinator for Midland, Mich.-based Dow Chemical Co. "Networking would make it ideal, but it's the best program of its type that I've seen."

DayMaker's printing options support most popular appointment-book formats.

Pastel Development Corp. is at 81 Franklin St., Suite 3B, New York, N.Y. 10013. Phone (212) 431-3421; fax (212) 431-3079. □



DayMaker uses prioritization tags, custom views, Gantt charting and alarms to help users manage their time and appointments.

Quadram pushes Mac floppy limits

By Henry Norr

Norcross, Ga. — Quadram last week brought its 20-Mbyte floppy drive system to the Mac.

The QuadFlextra, an external SCSI device priced at $895, uses disks packaged in the same 3.5-inch plastic shell as standard 800-Kbyte or 1.4-Mbyte disks, but special factory formatting boosts capacity to 20.4 Mbytes.

The drive, which Quadram has marketed for IBM PCs and compatibles since May 1990, offers an average seek time of 35 milliseconds and a sustained transfer rate of 1.25 Mbytes per second, performance rates comparable to older hard drives.

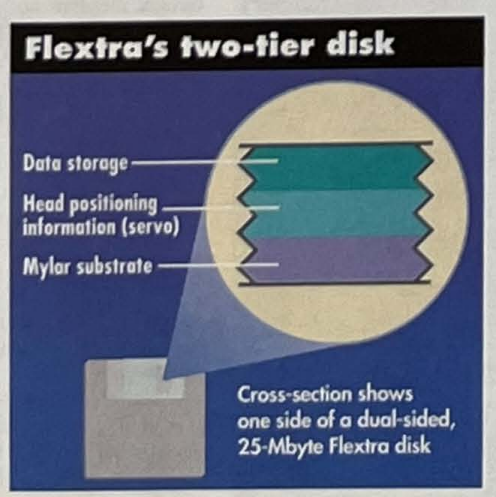
The Flextra VHDF (very high density floppy) technology was developed by Brier Technology Inc. of San Jose, Calif. Flextra disks are made of standard barium ferrite media, but Brier's patented Two Tier Tracking process creates two distinct horizontal magnetic layers on either side of the disk's mylar substrate. The lower layer, called the positioning tier, consists of thousands of prerecorded tracks used to guide the drive's read-write head; the upper surface, or data tier, is left completely free to store data.

The disks carry a lifetime warranty, and they will be able to hold 50 and then 100 Mbytes as read-write technologies improve, Quadram said.

Four disks are included with the QuadFlextra; additional disks are $30 each or $250 for a 10-pack.

The Quadram announcement comes as several Mac vendors are preparing to introduce drives based on a competing 20-Mbyte floppy technology, Insite Peripherals Inc.'s floptical system.

Quadram is at 1 Quad Way, Norcross, Ga. 30093. Phone (404) 923-6666; fax (404) 564-5528. □


Flextra's two-tier disk
Data storage
Head positioning information (servo)
Mylar substrate
Cross-section shows one side of a dual-sided, 25-Mbyte Flextra disk

HandOff extension will open new vistas in Trash management

By Henry Norr

Allen, Texas — A new extension due next month promises System 7.0 users a way to micro-manage their Trash, manually or automatically.

TrashMaster with Incinerator, developed by The HandOff Corp., will offer alternatives to the all-or-nothing approach of the standard System 7.0 Trash:

▸ **Submenus.** The program generates hierarchical submenus off the Empty Trash command in the Finder's Special menu, enabling users to delete selected files or folders while leaving others in the Trash.

▸ **Filters.** Through a control panel users also will be able to create filters that control what trash will be emptied when. Selection criteria can include file size, modification date, type or creator. For each set, users can choose to have the Trash emptied as soon as a matching file is moved to the Trash, on an hourly or daily basis, or on start-up or shutdown.

Other control-panel choices include erasing all files as soon as they are trashed, skipping warnings and erasing files from floppies when the disk is ejected. With the Incinerator option, which can be enabled with any filter, files are automatically overwritten once or three times as they are erased.

HandOff said it is still deciding whether to publish TrashMaster under its own name or through another publisher, but in either case it expects the software to be priced at about $59.

The HandOff Corp. is at P.O. Box 811, Allen, Texas 75002. Phone (214) 727-2329; fax (214) 727-2329. □

Managers seek consistent licensing

By Rochelle Garner

New York — The Microcomputer Managers Association this month issued a white paper urging standard, more easily comprehended software licenses and practices.

The association's 750 members collectively are responsible for more than 2 million desktop computers, about a quarter of which are Macs. The white paper:

▸ Recommended concurrent software licenses as the most workable arrangement for vendors and managers.

▸ Recognized that metering software is required for concurrent licenses and urged its integration in all networking operating systems.

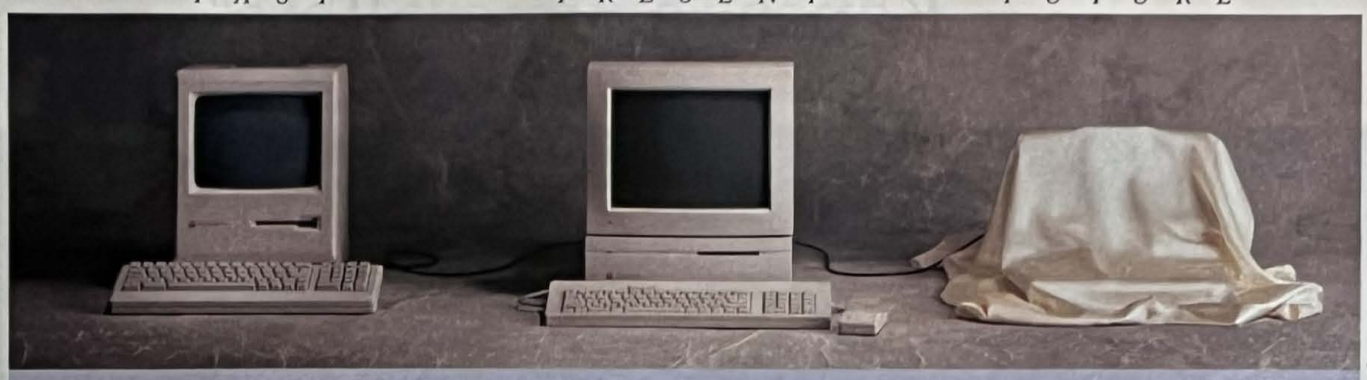
▸ Called for clear, concise language and truth in licensing information in all shrink-wrapped packages.

▸ Urged vendors to separate documentation from the license or the media that managers purchase.

"We feel that we ought to be able to buy usage rights without having to buy the documentation," said Priscilla Tate, MMA executive director. "Managers are not as concerned with pricing as we are with the value of the product."

Tate said MMA's members cannot be software police but do recognize vendors' concerns. As a result, MMA encourages its members to adopt employee copying policies and regular software audits.

The Microcomputer Managers Association is at P.O. Box 4615, Warren, N.J. 07059. Phone (908) 580-9091; fax (212) 580-1976. □



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HEWLETT PACKARD

Quantum capacities up, size down

New 2.5-inch drive holds up to 130 MBs

By Henry Norr

Milpitas, Calif. — Even Quantum Corp. executives acknowledge that the company has not generally been at the head of the pack in the race to bring new hard drive technologies to the market. But they say a slew of announcements last week will make it a leader in time-to-market as well as capacity and performance.

Quantum, long a primary drive supplier for Apple and third-party Mac storage vendors, unveiled new 2.5-inch and low-profile 3.5-inch units that set new capacity standards, as well as its largest-capacity half-height 3.5-inch unit.

JAMIE TANAKA

A worker assembles a hard drive at Quantum's new Milpitas, Calif., plant, where the ProDrive 1050 and LPS 450 will be built.

▸ **Go•Drive 60 and 120.** Two new 2.5-inch units are scheduled for volume production in January. The higher-capacity version, with a formatted capacity of 130 Mbytes, will be the first 2.5-inch drive available with room for more than 60 Mbytes, company officials said.

Targeted at the notebook market, the drives weigh just 6.2 ounces, spin up in less than 2.5 seconds, offer multiple power-saving modes and consume only 2 watts in operating mode. Average seek time is rated at 17 milliseconds, maximum transfer rate at 2.1 Mbytes and MTBF (mean time between failure) at more than 150,000 hours.

▸ **ProDrive LPS 120 and 240.** Already shipping to OEM customers, the new LPS models are the first production-volume 1-inch-high drives with capacities exceeding 100 Mbytes, the company said. The drives offer average seek times of 16 milliseconds, support for Fast SCSI-2 transfers at up to 10 Mbytes per second and an MTBF rating of 250,000 hours.

The new LPS drives, however, currently exceed the power budget of the Mac Classic, company officials said.

The 240-Mbyte LPS model will gradually replace Quantum's current 210-Mbyte ProDrive model, the company said.

▸ **ProDrive LPS 450 and 1050.** Scheduled for mass production in April 1992, the ProDrive LPS 450 will offer a capacity of 450 Mbytes in a 1-inch-high package, while the 1.6-inch-high ProDrive 1050, due in volume in March, will be Quantum's largest 3.5-inch drive. Both will offer average seek times of 10 milliseconds and an MTBF of 250,000 hours. Aimed at the workstation and disk-array market, the drives incorporate support for several advanced performance features, including Fast SCSI and synchronized spindles. □

Suitcase II, Fastback updates pack in new features

By Henry Norr

Baton Rouge, La. — Suitcase II and Fastback, two popular utilities from Fifth Generation Systems Inc., are due for major upgrades within the next few weeks, according to the company.

▸ **Suitcase II 2.0.** Highlighting the new release of the $79 font- and desk accessory-management program are features designed to alleviate font ID conflicts, which can wreak havoc with documents created on one Mac and printed from another.

A new command will generate a special file containing ID information about installed fonts. When a document is transferred from one system running Suitcase II to another, the user also can transfer the font ID file and instruct Suitcase to use it; the program will then automatically resolve any conflicts by temporarily harmonizing (renumbering) installed fonts, ensuring that the intended fonts are used when the document is printed.

Other enhancements include an improved interface with non-modal windows and an option to save and load user-defined sets of suitcase files that can contain fonts, DAs, sounds and Fkeys. Under System 7.0 the program offers balloon help and lets users create empty suitcase files — a capability the system itself does not provide.

Suitcase II upgrades will be $25.

▸ **Fastback Plus 2.6.** Currently known as Fastback II Version 2.5, Fifth Generation's backup utility will be renamed to match its MS-DOS equivalent. Enhancements include interface improvements and a Data Encryption Standard (DES) option that will let users secure backed up files; encryption will about double the time required for backups, according to the company.

Under System 7.0 the new version will offer balloon help and support for virtual memory. Users can execute a macro file or open a history file by dragging it to the Fastback Plus icon.

The new release also will offer simplified cross-platform transfer capabilities. Users with SuperDrives will be able to choose DOS 720-Kbyte and 1.44-Mbyte floppy formats directly from Fastback's Backup window; Fastback Plus users on an IBM PC or compatible will then be able to restore the files.

The program's price remains $189. Upgrades are $30 but free to customers who bought the previous version after May 1.

Fifth Generation Systems Inc. is at 10049 N. Reiger Road, Baton Rouge, La. 70809. Phone (504) 291-7221; fax (504) 295-3268. □

MasterJuggler tosses in 7.0

By Henry Norr

Spring, Texas — MasterJuggler has taken its act to System 7.0, and publisher ALSoft Inc. has cut the price of admission almost in half.

The company this month began shipping Version 1.57 of the popular utility for managing fonts and desk accessories. From the user's perspective, the update offers new features, and the program looks and functions just as previous versions did under System 6, ALSoft said. Internally, however, the program has been substantially modified to handle TrueType, System 7.0 sounds and other features of the new operating system, according to the company.

In addition to letting users install fonts, DAs, sounds and Fkeys stored in any folder, MasterJuggler offers automatic resolution of font-numbering conflicts without changes to the font, compression and on-the-fly decompression of fonts and sounds, and a pop-up menu for switching among applications.

In an effort to attract buyers of low-cost Macs, the company said it has slashed the product's price from $89.95 to $49. For owners of previous versions of MasterJuggler, upgrades are $15 plus $4 shipping and handling; owners of two earlier utilities, Juggler and Juggler Plus, can get MasterJuggler 1.57 for $18 plus shipping and handling.

ALSoft Inc. is at P.O. Box 927, Spring, Texas 77383. Phone (713) 353-4090; fax (713) 353-9868. □

News BRIEFS

Insignia bows to users over SoftPC pricing

Mountain View, Calif. — Insignia Solutions Inc. shipped its new family of IBM PC-emulation software this month, but bowing to user complaints, it reduced the prices it had announced in August.

SoftAT 2.5, the new high-end version for Macs with 68020, 68030 and 68040 CPUs is $499, down from the planned $542 price tag (see MacWEEK, Aug. 13).

Universal SoftPC 2.5, which runs on all Mac models, is $325, down from $399. Entry Level SoftPC 2.5, for 68000-based Macs and the LC, is priced as planned at $199.95.

The company also reduced the upgrade price for SoftAT, from $149 to $79, for owners of SoftPC who have the company's EGA/AT add-on. Universal SoftPC is available to owners of the old basic SoftPC for $79, instead of $99; upgrades to the Entry Level version from SoftPC for the Classic are $29, instead of $49. The company also said it will offer SoftAT for $175 to owners of older versions of SoftPC who do not have the EGA/AT module.

Users who have ordered the new versions will receive a rebate for the difference, the company said.

Insignia Solutions Inc. is at 526 Clyde Ave., Mountain View, Calif. 94043. Phone (415) 694-7600 or (800) 848-7677; fax (415) 964-5434.

Microsoft places refurbished Office on CD-ROM

Redmond, Wash. — Microsoft Corp. recently shipped the CD-ROM version of The Microsoft Office 1.5, a product that combines business applications and their documentation on one compact disc.

Microsoft Office 1.5 includes Excel 3.0, Mail 3.0, Word 4.0 and PowerPoint 2.01. Installation of the four programs is simplified by their delivery on CD, Microsoft said.

The package is available now for $750. Users of Version 1.0 can upgrade for $129. Hard copies of documentation are available for $15.50 plus tax.

Microsoft Corp. is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080; fax (206) 883-8101.

Visionary alerts users to damaged copies of PIM

Portland, Ore. — When Visionary Software Inc. began shipping its personal information manager First Things First this month, it inadvertently made some copies of a damaged version. As a result, users not connected to an AppleTalk network may find the software crashes their system.

Visionary recommends that all users of Version 1.01 fax the company at (503) 452-1198 with their serial number to receive Version 1.02, or download the maintenance upgrade from the Utilities/Desk Accessories section of America Online's Software Library.

Visionary Software Inc. is at P.O. Box 69447, Portland, Ore. 97201. Phone (503) 246-6200 or (800) 877-1832; fax (503) 452-1198.

Package gets lawyers Ready for Trial!

By Henry Norr

St. Paul, Minn. — Trial lawyers and litigation-support staffs can now get Ready for Trial! on their Macs.

The $995 package is "the first Macintosh software designed specifically for the management and analysis of deposition and trial transcripts," according to its publisher, Robins Analytics Inc.

"There are going to be lawyers buying Macs just to run this program," said Mark Johnson, a partner and specialist in major personal-injury cases at Shamberg, Johnson, Bergman & Morris, a legal firm in Overland Park, Kan.

"There are lots of DOS programs out there that are supposedly for litigation support, but they really just do text searching," Johnson said. "What they don't provide are the organizational tools Ready for Trial! has."

Incorporating a database engine as well as a text-retrieval engine, Ready for Trial! lets users "slice" a transcript into segments categorized according to the issue addressed. Notes, a summary and references to relevant exhibits can be attached to each segment, and the date and time of the facts presented can be recorded in a special window. The user can then sort and combine segments from any number of witnesses by issue, exhibit or chronology.

Ready for Trial! provides 16 analytical and administrative report formats. It comes with a utility called TransFIX, which converts MS-DOS or ASCII files generated by court reporters into its own format.

Johnson said when he tries cases, he keeps a Macintosh Portable, attached to a WriteMove printer from GCC Technologies Inc., outside the courtroom. During breaks he uses Ready for Trial! to search depositions for material to use during cross-examination. Search capabilities include Boolean operations, proximity searching, and display and printing of up to 350 lines of context around each reference found.

The program was first shipped in August. Version 1.1, sent free to users last month, adds a new integrated help system, user control of fonts and improvements to TransFIX.

Robins Analytics Inc. is at 245 E. Sixth St., St. Paul, Minn. 55101. Phone (612) 224-1289 or (800) 767-3239; fax (612) 224-2633. □

Law firm reaps rich rewards from move to Mac

Robins Analytics Inc.'s Ready for Trial! is only the latest Mac program in the desktop arsenal of attorney Mark Johnson, a partner at Shamberg, Johnson, Bergman & Morris in Overland Park, Kan.

Johnson said he has been "wildly successful" — once to the tune of $3 million — in using the Mac to help him win favorable settlements in catastrophic-injury cases.

Using such programs as Aldus PageMaker, Adobe Illustrator, MacroMind Director and Paracomp Inc.'s Swivel 3D Pro, he creates what he calls "settlement brochures," in print or on videotape, that dramatically present his case through scanned photos, documents, tables, text and pull quotes. He sends these presentations to opposing attorneys, expecting that they will forward the items to their clients.

One of his cases involved the death of a 10-month-old baby from burns suffered when a heater hose in a Toyota pickup truck burst. Johnson, representing the parents in a suit against the manufacturer, created a two-volume, 1.3-inch-thick PageMaker document about the case, highlighted by photos scanned from the family scrapbook, excerpts from medical records and quotes from the victim's parents emotionally describing their grief.

The document, he said, quickly made its way through Toyota's corporate ladder, and within weeks a company representative showed up at his office bearing a check for $2.6 million, the full amount his clients sought. Seeing the effect of the presentation, Johnson said, he turned down the offer and eventually settled for $3 million.

Johnson said he's disappointed that "Apple's been so apathetic in pursuing the legal market."

When he wrote to the company about the Toyota case, he said, "I never received so much as a 'thank you' or acknowledgment."

— By Henry Norr

PC Globe ships Mac version of atlas software

Tempe, Ariz. — PC Globe Inc., a leading developer of map software for IBM PCs and compatibles, this month shipped the Mac version of its electronic atlas, MacGlobe.

The $79.95 application, which was announced this summer (see MacWEEK, Aug. 6), displays profiles of 190 countries and dependencies. For each country, it can show detailed maps, color graphics, and annually updated socioeconomic and cultural information.

Data about population, age distribution, ethnic groups, health statistics, economics and currency conversions is supplied with the program.

From the data, it can create bar charts comparing countries and save them to PICT files. Measurements can be viewed in English or metric units.

PC Globe Inc. is at 4700 S. McClintock, Suite 150, Tempe, Ariz. 85282. Phone (602) 730-9000 or (800) 255-2789; fax (602) 968-7196. □

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COMPUTING FROM DIGITAL.

SANBI software helps Mac users navigate Japanese character sets

By Matthew Rothenberg

Riverside, Calif. — SANBI Software Co. is shipping reference and training software designed to help English speakers find their way around the Japanese kanji alphabet.

Available for $149, KanjiSama includes a database of hiragana, katakana and 2,965 kanji characters. The program provides five methods for looking up characters: by reading; stroke count; basic meaning; traditional Japanese radicals; or the kanji alphanumeric code (KANC), a proprietary radical system created by SANBI.

The package includes two electronic Japanese-English dictionaries covering general and technical terms, allowing users to look up all words containing a particular kanji character, as well as groups of characters.

KanjiSama runs on KanjiTalk, Apple's Japanese-language system software.

SANBI also has released Kunren, a HyperCard stack that provides flashcard recognition drills. Each card contains a kanji compound or phrase, the hiragana version and the English translation; users can add an unlimited number of cards to the drill, according to SANBI. The Kunren stack is $15 alone or $10 when purchased with KanjiSama.

SANBI Software Co. is at 3594 Crowell Ave., Riverside, Calif. 92504. Phone (714) 352-0276; fax (714) 352-0276. □

AntiToxin, Rival get upgrade

By Henry Norr

Agoura Hills, Calif. — Two commercial anti-virus programs with loyal followings got updates last month.

▶ **AntiToxin.** Mainstay released AntiToxin 2.0, a new version of its $99.95 utility. The new release adds no new features, but protects against all known viruses and is fully compatible with System 7.0. In the previous version, 1.4, the virus-scanning application worked under the new system, but the system extension did not.

Upgrades are $15; they are free to customers who bought an older version after Aug. 1; shipping is $5.

▶ **Rival.** Microseeds Publishing Inc. released Version 1.1.8 of Rival. The maintenance update is designed to fix several problems with the previous version under System 7.0. A free updater called Rival Refresh 1.1.8 has been sent to registered owners and is available through on-line services.

Mainstay is at 5311-B Derry Ave., Agoura Hills, Calif. 91301. Phone (818) 991-6540; fax (818) 991-4587.

Microseeds Publishing Inc. is at 5801 Benjamin Center Drive, Suite 103, Tampa, Fla. 33634. Phone (813) 882-8635; fax (813) 884-5941. □

SatView gives Macs an eye on the weather

By Raines Cohen

Delray Beach, Fla. — The latest worldwide weather conditions can be continuously fed to Macs with SatView, a new weather-satellite data-receiving system from Marisys Inc.

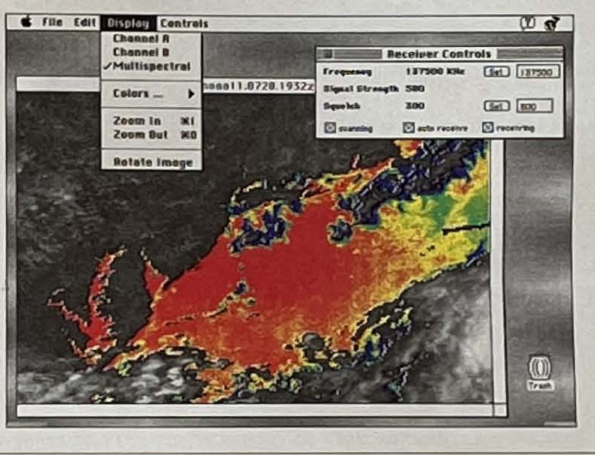
The $3,950 system includes a satellite receiver, NuBus card and software. It can receive data anywhere in the world from polar-orbiting meteorological satellites launched by the U.S. National Oceanic and Atmospheric Administration, the European Space Agency, the Soviet Union, Japan and China.

SatView's software translates the satellites' formats and stores received images on the Mac's hard disk in the background, using the Apple Real-time Operating System Executive (A/ROSE) system extension.

It can view multiple images; adjust color settings to enhance particular features; and combine the infrared and visible images the satellites send to mask out cloud-cover, revealing surface temperature conditions without interference. It can export images in PICT format for use in other applications.

Marisys, formerly an Apple value-added reseller, also sells repackaged Macs designed for nautical use. The Marisys 5106, priced at $4,980, includes a Mac IIci with 5 Mbytes of RAM, a 100-Mbyte hard drive and a 200-watt power supply in a salt-proof and vibration-resistant case. The company also sells Systems-Watch, an electronic shipboard monitoring system.

Marisys Inc. is at 2905 S. Federal Highway, C-10, Delray Beach, Fla. 33483. Phone (407) 272-3490; fax (407) 272-3485. □



Marisys' SatView NuBus card receives in the background temperature and cloud-cover data from weather satellites. The included software helps users manipulate and process the received images.

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Bowers adds THINK C 5.0 support

Lincoln Center, Mass. — Bowers Development Corp. last month announced a free upgrade to AppMaker, its interface-building and code-generation tool.

Version 1.1.2 provides support for Symantec Corp.'s THINK C 5.0 and THINK Pascal 4.0. Procedural programmers can download the update from AppleLink, America Online or Symantec Corp.'s CompuServe forum. For object-oriented programmers Bowers also offers patches that make it possible to use the original THINK Class Library (TCL) 1.0 with the new Symantec compilers, but because of the patches' size, Bowers said, customers must request the update on disk.

AppMaker 1.2, a version that supports Apple's MacApp, is not affected by the new release. A Version 1.5, which will support MacApp and the new TCL 1.1, is under development.

Bowers Development Corp. is at P.O. Box 9, Lincoln Center, Mass. 01773. Phone (508) 369-8175; fax (508) 369-8224. □

Now patches up Utilities collection

Portland, Ore. — Now Software Inc. last week released Version 3.0.1 of Now Utilities, its popular collection of system enhancements.

The new release adds no new features to the $129 package, but it fixes bugs in Version 3.0, a major upgrade shipped in August.

An updater application and separate patches for each of the 11 utilities in the collection have been posted on major on-line services and distributed to user groups.

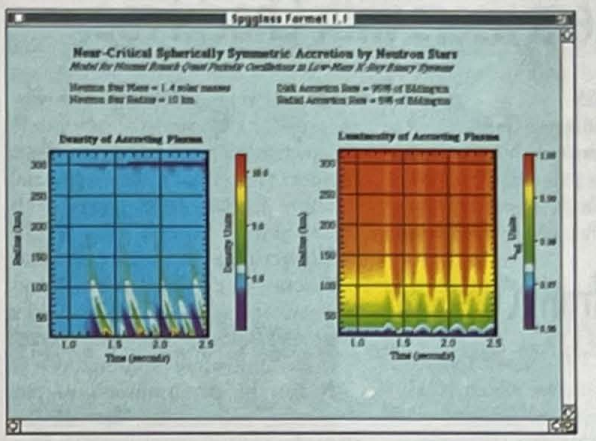
Registered owners also can order Version 3.0.1 directly from Now for a $5 shipping and handling fee.

Highlights of the System 7-savvy Now collection include SuperBoomerang, a navigational and search aid; Startup Manager, an extension manager; MultiMaster, a launching utility; and NowMenus, which adds hierarchical submenus to the Apple menu (see MacWEEK, Sept. 24).

Now Software Inc. is at 520 S.W. Harrison St., Suite 435, Portland, Ore. 97209. Phone (503) 274-2800; fax (503) 274-0670. □

Spyglass offers scientists new Format

Layout, animation package fine-tuned


Spyglass Format 1.1
Near-Critical Spherically Symmetric Accretion by Neutron Stars
Density of Accreting Plasma
Luminosity of Accreting Plasma
Time (seconds)

Legends, titles and other annotations dress up this complex 2-D color raster image in Spyglass Format. New features, such as the color preview, help users integrate scientific visualization output into presentation overheads and 35mm slides.

By Raines Cohen

Champaign, Ill. — Spyglass Inc. shipped a new version of Spyglass Format, its graphics layout and sequence-animation application, this month. Enhanced graphics presentation features include annotation and improved animation processing.

Format, introduced last year (see MacWEEK, Jan. 15), produces layout canvases and animations of images created in other applications. The program is designed for use with the company's suite of visualization programs, Spyglass Transform, Dicer and View.

The new release of Format, Version 1.1, lets users annotate and resize all objects. Graphics saved in PICT format can be used as overlays.

Users now can specify the range of the color bar, allowing them to fine-tune the display of the unique color tables created in Spyglass Dicer. Text formatting also has been improved.

The new version also offers simplified animation processing. It can create a preview before printing and black out the desktop for film recording or photographing the screen.

"The new features are absolutely crucial," said Dr. Bob Meade, research scientist at the Massachusetts Institute of Technology in Cambridge, Mass. "I create simulations of the physical properties of matter on a Cray supercomputer, dump them into a 4-Mbyte HDF (Hierarchical Data Format) file, send it back to the Mac and I'm ready to fly."

Meade said he uses other Spyglass applications to render images of data, then manipulates those images in Format. "It's head-and-shoulders above the other 2-D visualization applications. There's some nice software for IBM RS/6000 systems, but it requires a $15,000 CPU and costs much more [than Format]."

The list price for Spyglass Format 1.1 remains $195; current users can upgrade for free. Educational, government and volume discounts are available.

Spyglass Inc. is at 701 Devonshire Drive, C-17, Champaign, Ill. 61820. Phone (217) 355-6000; fax (217) 355-8925. □

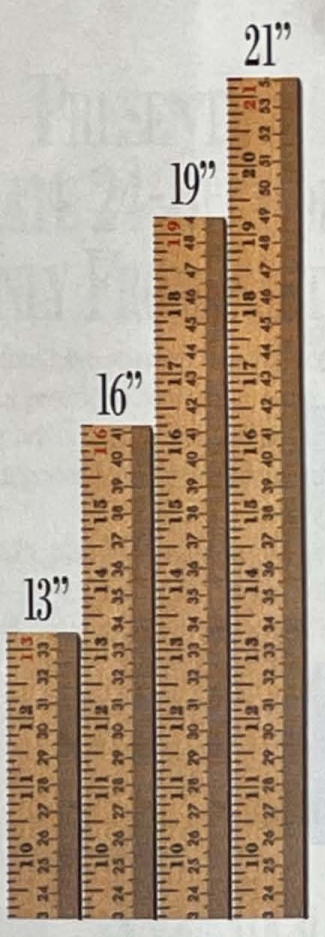


IMAGE COMPRESSION, ACCELERATION, MULTIPLE MONITOR SUPPORT

Practical Peripherals lending help to modem users with CheckFree

By Nathalie Welch

Westlake Village, Calif. — To help users accomplish more with their modems, Practical Peripherals Inc. last month began bundling CheckFree bill-payment software, including one month of free service, with its modems.

Practical Peripherals' modems include internal and external 14,400-, 9,600-, 2,400- and 1,200-bps models.

CheckFree, an electronic bill-payment service offered by CheckFree Corp. of Westerville, Ohio, lets users write checks electronically to any individual or company.

It can be programmed to pay recurring payments. The service uses the U.S. Federal Reserve System to post payments.

After the first month, the service is $9.95 per month for up to 20 payments and $3.50 for an additional 10 or fewer payments.

CheckFree, which is safeguarded by a four-digit personal security code, provides expense and budget reports, as well as legal hard-copy receipts for all payments.

CheckFree exports to ChipSoft Inc.'s MacInTax and Microsoft Corp.'s Excel.

Practical Peripherals Inc. is at 31245 La Baya Drive, Westlake Village, Calif. 91362. Phone (818) 706-0333; fax (818) 706-2474. □

Tax help from ChipSoft

San Diego — It's never too soon to think about taxes, which is why ChipSoft Inc. this month announced its ShortForm tax preparation software for users filing 1040A or 1040EZ forms.

Due in December for $39.95 for the Mac and Windows, and $29.95 for DOS systems, ShortForm includes a brief manual and information to help users decide if they need ChipSoft's MacInTax software for more-elaborate forms. ShortForm users can transfer data to MacInTax State products for filing state forms, or to MacInTax Personal/1040 for itemized returns.

ChipSoft Inc. Personal Order Department is at 6330 Nancy Ridge Road, Suite 103, San Diego, Calif. 92121. Phone (619) 453-8722. □

Apple study: Macs aid small businesses

By Shawn Tomlinson

Jacksonville, Ore. — What do you get when you give free Macs to businesses in a small, rural community? According to results from an Apple-sponsored study, you get a dramatic increase in business productivity.

A year ago, Apple gave Macs to 31 small businesses, the public library, elementary school, and police and fire departments of Jacksonville, a town in southern Oregon. Called Operation Inspiration, the Apple project was tracked by Diagnostic Research Inc., an independent research company based in Los Angeles.

The study, released late last month, reports that Jacksonville users' productivity rose 55 percent, and customer satisfaction rose 68 percent.

Among the productivity improvements cited by the study:

- A service business reduced general-ledger tasks from 20 hours to four hours a month.
- A non-profit group saved $1,000 and halved the time needed to produce its annual brochure.
- A tax preparer doubled his business by being able to work on customers' returns right up to the Internal Revenue Service's April 15 deadline.

"Using the Mac made everything so easy," said Ladena Romero, co-owner of the Silver Lining jewelry store here. "We couldn't get along without it now. And we had never touched a computer in our lives before this experiment."

Romero said the store she owns with her husband uses the Mac for checking, billing and word processing.

Apple is starting other Operation Inspiration experiments in Japan and Western Europe, the company said. □

MicroSpeed trackball thinks small

By Nathalie Welch

Fremont, Calif. — Looking for a small trackball with full functionality? MicroSpeed Inc. this week will begin shipping MicroTRAC, its three-button trackball that can fit in the palm of your hand.

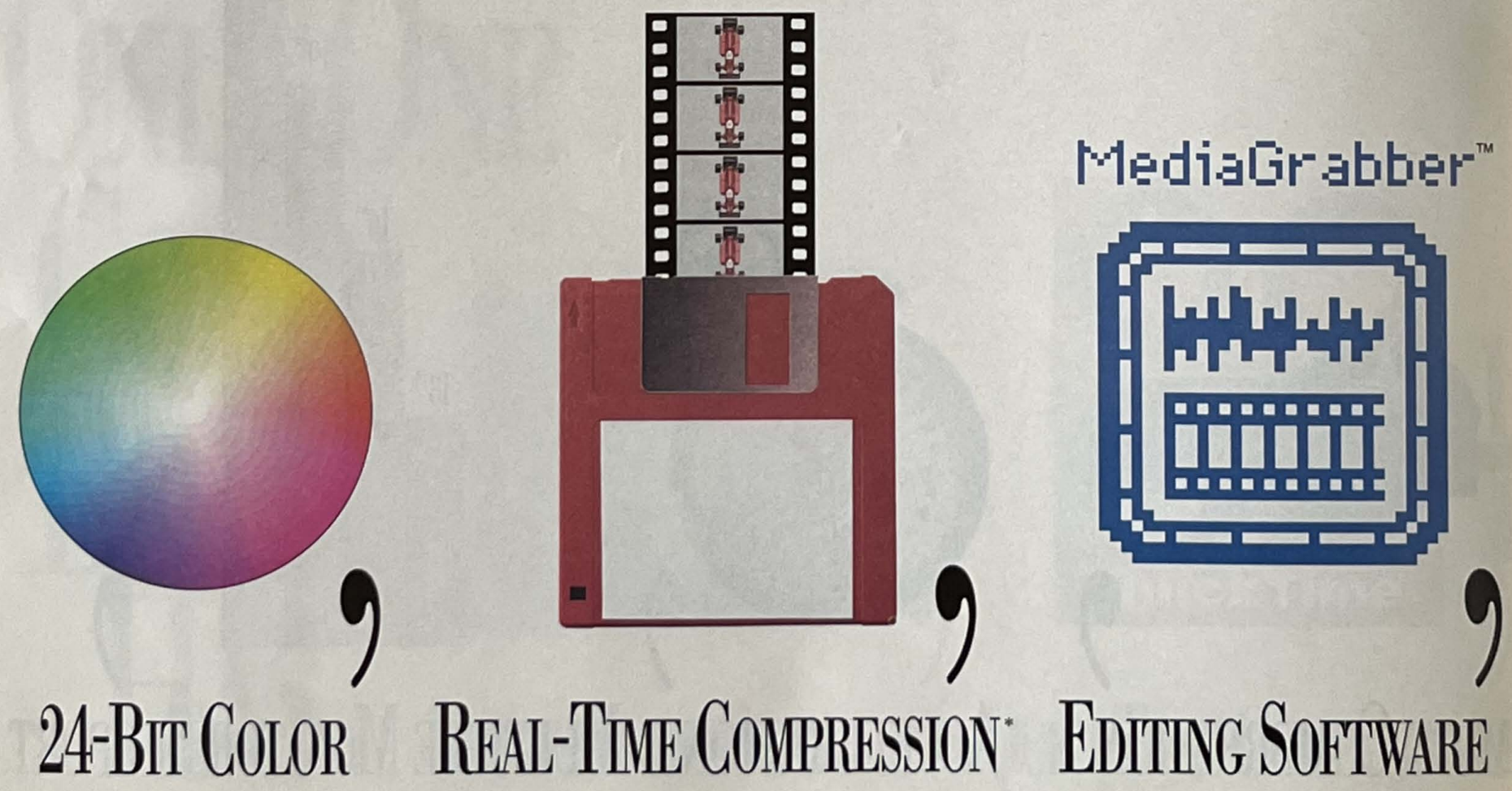
Priced at $89.95, MicroTRAC measures 2 inches wide and just under 3 inches long — small enough to appeal to notebook users, the company said. It plugs into the Mac's Apple Desktop Bus.

Users can define up to eight keyboard commands, adjust tracking and double-click speed, and switch buttons for right- or left-handed operation. Trackball buttons can invoke click, Shift-click and click-lock commands.

The trackball can be attached to portable computers.

MicroTRAC is a three-button trackball that measures 2 inches wide by about 3 inches.

MicroSpeed Inc. is at 4400 Old Warm Springs Blvd., Fremont, Calif. 94538. Phone (510) 490-1403 or (800) 232-7888; fax (510) 490-1665. □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Xerox's AccuText 3.0 trains itself to scan faster, more accurately

By Matthew Rothenberg

Peabody, Mass. — Xerox Imaging Systems Inc. has taught its Mac optical character recognition software some new tricks, including text-training and background-processing features.

Unveiled at this month's Seybold Computer Publishing Conference & Exposition in San Jose, Calif., and shipping this week, the new System 7.0-compatible Version 3.0 of AccuText is priced at $995, up from $799 for Version 2.0.

As it queries unfamiliar characters, AccuText 3.0's Text Verifier learns to read scanned text faster and more accurately.

The new version includes XIS' Text Verifier software that, when activated, queries characters that may be misprinted or unfamiliar. As users verify or correct AccuText's interpretation, the system learns to read scanned text faster and can increase OCR accuracy by as much as 100 percent, the company said.

AccuText 3.0 also speeds OCR by allowing users to scan as many as 50 queued TIFF files for later recognition; this OCR processing can run in the background under MultiFinder or System 7.0.

In addition, the new version has a preprocessing filter that connects the bit-mapped dots of dot-matrix documents to create continuous-tone characters, so the OCR program can read more accurately.

Users of any previous version can upgrade for $150.

Xerox Imaging Systems Inc., a wholly owned subsidiary of Xerox Corp., is at 9 Centennial Drive, Peabody, Mass. 01960. Phone (508) 977-2000; fax (508) 977-5307. □

Archive boosts quarter-inch tape capacity

Anaconda drives will store 2.1GBs

By Henry Norr

Costa Mesa, Calif. — Archive Technology Inc. last month introduced a pair of new backup mechanisms that push the capacity of the quarter-inch tape format into the multigigabyte range.

Slated to ship in volume in mid-1992, the new Anaconda 2800 and 2850 drives will deliver a formatted, uncompressed capacity of 2.1 Gbytes, the company said.

Like the previously announced 1.6-Gbyte Anaconda 2750, the new drives promise a sustained data transfer rate of at least 600 Kbytes per second, or 36 Mbytes per minute — more than 2.5 times the transfer rate of previous-generation cartridge tape drives, according to Archive.

Both new drives have an MTBF (mean time between failure) rating of 80,000 hours, based on a 20 percent duty cycle. Advanced features of the Model 2850 include a 2-Mbyte memory buffer to boost transfer rates, Flash EPROMs that make possible field firmware upgrades from tape and a hardware data-compression option that doubles capacity to 4.2 Gbytes.

Archive said it expects to ship evaluation units to its Maynard Electronics Division and to OEM customers early next year. OEM pricing of the 2800 will be about $750 in small quantities, the company said, while the 2850 will be about $900. The model 2750, originally called the Viper, is expected to ship in volume by the end of the year.

The models introduced last month owe their expanded capacity to higher linear density and a new extended-length QIC-2100C cartridge, developed by 3M Corp. of St. Paul, Minn. □

MacProducts takes opticals to low price

By Dartanyan L. Brown

Austin, Texas — Signaling what could be the beginning of a magneto-optical drive price war, MacProducts USA Inc. last week began shipping a 128-Mbyte drive priced at less than $1,500.

Called the Magic REO128, the $1,499 drive is based on a mechanism from Mass Optical Storage Technologies Inc. that has an average seek time of 35 milliseconds. The drive offers a sustained data transfer rate of 512 Kbytes per second and a MTBF (mean time between failure) rating of 30,000 hours, according to the company.

The drive comes with external termination and SCSI ID selection, two AC outlets, cables and software. It is covered by a 30-day money-back guarantee and a one-year warranty; an extended warranty is available for $149 per year. If the unit fails within the warranty period, MacProducts promises free replacement. Optical cartridges for the drive, which the company said have a shelf life of 10 years, are sold separately for $99 each. The company offers free data recovery service on its media.

The company said it also will offer an internal version for future Macs and for IBM PCs and compatibles.

MacProducts USA Inc. is at 608 W. 22nd St., Austin, Texas 78705. Phone (512) 472-8881 or (800) 622-3475; fax (512) 499-0888. □

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Apple to power up Remote Access

Network managers will see the impact

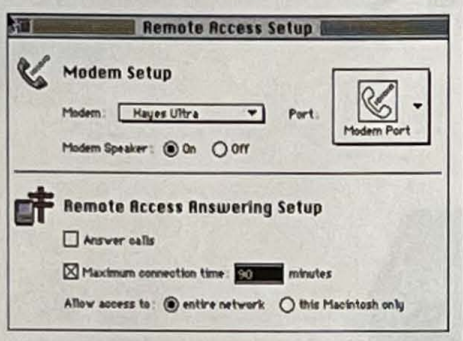
By Jonathan A. Oski

AppleTalk Remote Access, the upcoming Apple software that will let users dial into AppleTalk networks, will meet a long-standing need for individual users, but it is also a tool whose impact no network manager will be able to ignore.

We examined a prerelease copy of the software, which will be announced at NetWorld '91 in Dallas this week. The software will be included with Apple's forthcoming PowerBook notebook computers and will be available separately for $199.

What it does. AppleTalk Remote Access allows one Mac to call another and access its files and services. Connections can be restricted to just the "host" Mac — the one you are calling — or to the AppleTalk network on which it resides.

Unlike similar products from both Farallon Computing Inc. and Shiva Corp. (see story, Page 24), AppleTalk Remote Access does not allow users to link two entire networks together. Services on the remote network are accessible only to the Mac that initiates the Remote Access connection.



Setting up AppleTalk Remote Access can be done with either the Remote Access application or directly with the Remote Access Setup control panel.

System 7.0 integration. AppleTalk Remote Access will require System 7.0. Apple also recommends 4 Mbytes of RAM, although 2 Mbytes should work.

Once installed, configuration through a control panel is easy. The Remote Access application, used to initiate a connection, also can be used to configure the product.

Using the control panel, you can turn call answering on or off, specify the maximum length of any connection, set access to just the host or the entire network, and specify the type of modem attached to your modem or printer port.

Apple will support an extensive list of both 2,400-bps/V.22bis and 9,600-bps/V.32 modems in the software. Users also will be able to write initialization and control scripts for other modems in CCL (Command Control Language), described in separate documents that will be available through APDA.

Access control. In some ways, AppleTalk Remote Access operates as a natural extension to current sys-

See Remote, Page 24

Nuvotech unleashes RadioBridge

By Mitch Ratcliffe

Sausalito, Calif. — Now your LocalTalk packets can go where only eagles dared. Nuvotech Inc. last week announced RadioBridge, a half-router that connects LocalTalk networks, even those in different buildings, with radio transmissions.

Due in December for $1,595, RadioBridge will ship in a standalone wall or rack-mount model and as an add-in card for Nuvotech's NuvoStar 24-port Open Architecture Management Hub. It is the first network router to use radio frequencies rather than network cabling.

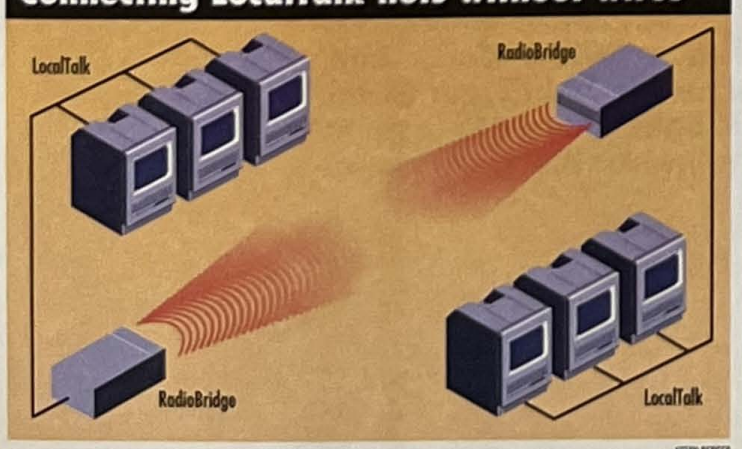
Spread-spectrum technology, which involves spreading data over available channels, lets RadioBridge broadcast reliably at relatively low power, the company said. Transmitting at 121 Kbps on four bands between 902 and 928 MHz, about the same bands used by cellular telephones, the router's total throughput depends on operating conditions, the company said.

Users can choose either a 500-foot or 1,000-foot broadcast range. RadioBridge does not require a Federal Communications Commission site license because it uses channels available to the public.

Floor-to-floor or building-to-building AppleTalk Phase 1 and 2 routing is supported by RadioBridge. It ships with Mac software that allows users to configure their network, make zones visible or invisible, and record error rates and dropped packets across radio connections.

Nuvotech Inc. is at 2015 Bridgeway, Suite 204, Sausalito, Calif. 94965. Phone (415) 331-7815; fax (415) 331-6445. □

Connecting LocalTalk nets without wires



KEVIN BERGER

AlisaTalk gets Unix, terminal emulators

By Raines Cohen

Pasadena, Calif. — Alisa Systems Inc. this week is expected to announce several new products that help connect Macs to Unix hosts.

The new offerings include:

- **Unix network services.** Alisa has ported its AlisaTalk connectivity offerings, originally just for DEC VAX hosts, to several other platforms. AlisaTalk for Unix will run on Unix, Ultrix and AIX operating systems on Sun, DEC, and IBM workstations.

The program provides AFP (AppleTalk Filing Protocol)-compatible file sharing and high-speed file transfer between Mac and Unix users; access to all networked print-

See Alisa, Page 25

LAN Manager to get AppleTalk connection by end of the year

By Margie Wylie

Dallas — For the first time in its uphill climb to compete against Novell Inc.'s NetWare, Microsoft Corp.'s LAN Manager network will get its own AppleTalk connections by year's end, the company announced here at NetWorld '91 this week.

The 50-user, $995 Microsoft LAN Manager Services for Macintosh is Microsoft's first release of software it bought from 3Com Corp. earlier this year.

Microsoft's former development partner halted work on its version of the software, called 3+Open, last year. In January, it sold to Microsoft the extensions it had created for the IBM PC or compatible network, including its 3+Open for the Mac (see MacWEEK, Jan. 15).

The 3Com Mac services have been adapted to work with Microsoft's top-of-the-line LAN Manager 2.1 but won't offer any other substantial improvements.

Like 3+Open for Mac, the new version of the software lets Macs access a LAN Manager network's file and print services through an AFP (AppleTalk Filing Protocol)-compatible server volume. The volume, which is mounted through the Chooser and appears as a standard AppleShare server, lets Macs share files with DOS and OS/2 clients. Macs also can print to PostScript-based printers attached directly to the LAN Manager server, and DOS and OS/2 clients can print to LaserWriters attached to the AppleTalk network.

Other server-based amenities, such as remote access, network installation and wide-area gateways, are unavailable to Mac clients. Mac users also cannot create or delete users, set access privileges, or otherwise manage the LAN Manager network.

LAN Manager Services for the Mac works with LocalTalk, token ring or Ethernet. The software supports System 7.0 and AppleTalk Phase 2 protocols and routing.

Registered 3Com 3+Open owners can upgrade their entire network, including Mac services, to LAN Manager 2.1 for $1,690.

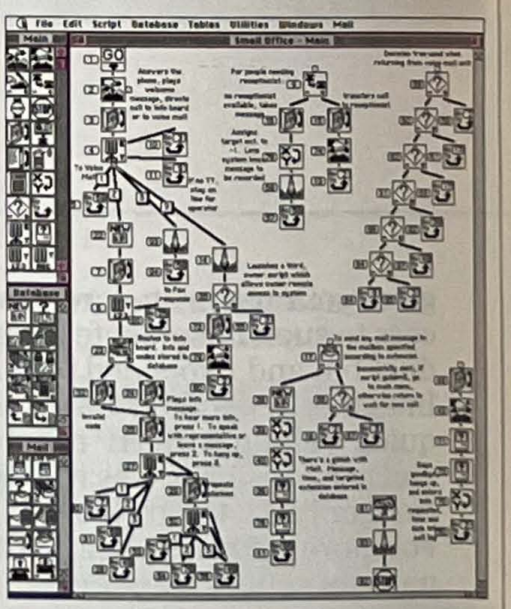
Microsoft is at 1 Microsoft Way, Redmond, Wash. 98052-6399. Phone (206) 882-8080; fax (206) 883-8101. □

Cypress' PhonePro calls on ISDN for telephone front end

By Nathalie Welch

San Jose, Calif. — Cypress Research Corp. has tapped into Apple's new ISDN technology for the first release of its telephone interface software, the company said here at InterOp '91 last week.

Originally slated to be released last summer with hardware developed by Cypress (see MacWEEK, Feb. 5), PhonePro, at about $600 per copy, won't show up until Apple's $1,099 NuBus ISDN (Integrated Services Digital Network) card does next month.



PhonePro can be used to build complex voice-messaging systems by dragging and connecting available icons into a flow chart.

The integrated icon-based programming language and multi-format database lets users create customized telecommunications applications by connecting icons in a flowchart.

"It's sort of like a HyperCard stack for an answering machine," said Mike Keeler, a computer consultant and PhonePro beta tester based in Pasadena, Calif. "It's extremely flexible and allows you to paint a visual picture

See Cypress, Page 25

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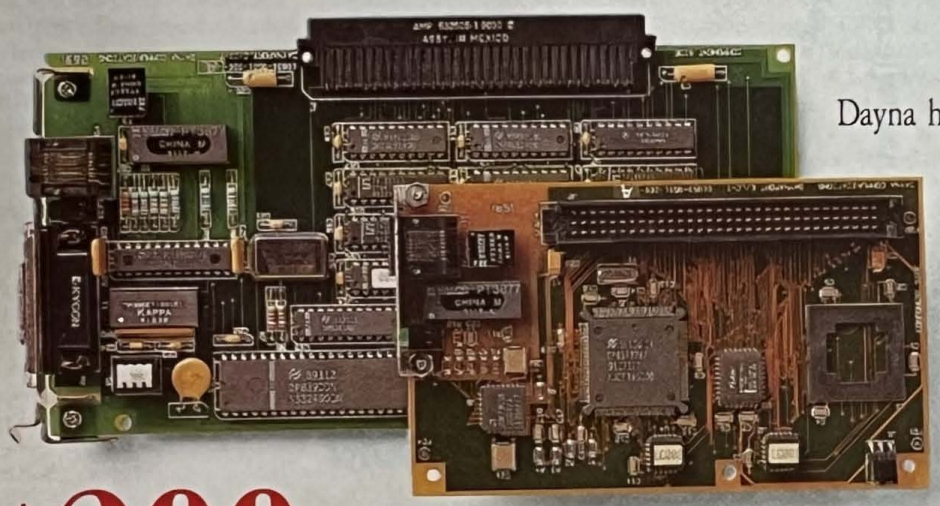

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ISDN may be too little, too late

Some companies leery about investing

By Mitch Ratcliffe

San Jose, Calif. — Apple might see the rollout of its ISDN NuBus card here at InterOp '91 last week as a fulfillment of its long-standing promise of digital connectivity, but many users believe ISDN has arrived too late and too slow to win the telecommunications race.

ISDN (Integrated Services Digital Network) is a digital communications protocol that works over ordinary copper phone lines. First proposed in the early 1980s, it has been hailed as the technology necessary to realize a data-communications revolution. But with the slow emergence of applications and newer, faster standards arising to challenge ISDN, many corporations are examining the technology carefully before investing.

"In its current guise, with only 64 Kbps, we probably won't go with ISDN," said Gerry Nadeau, manager of systems planning and management at GTE Co.'s Government Systems division in Newton, Mass.

Nadeau said GTE is using dedicated T-1 telephone lines capable of transmitting data at 1.544 Mbps for its more demanding applications. "Our bandwidth requirements are a lot higher and we need a lot more horsepower [than ISDN can deliver]," he said.

During the decade since the ISDN standard was proposed, a number of faster technologies have come to market. One of these is Switched Multimegabit Data Service (SMDS), which uses dedicated digital telephone switches as if they are high-speed routers (see MacWEEK, Sept. 17). Another is Fiber Distributed Data Interface (FDDI), a metropolitan-area networking technology that uses fiber-optic cabling. Both are capable of transmitting data at multiples of the bandwidth offered by ISDN.

Broadband ISDN (B-ISDN) is also arising as a challenge. The 1.544-Mbps technology, which requires substantial upgrading of the U.S. telecommunications infrastructure, could appear late in the 1990s.

"We can live with the T-1 system we have in place for a long time, but I imagine we'll consider B-ISDN when it comes along," GTE's Nadeau said.

Additionally, user interest in ISDN has flagged because very few developers have introduced applications that take advantage of its speed or the availability of carrier channels that provide caller identification data.

"We don't see many applications that need 64-Kbps data transmissions," said Jim Dolezal, chief of the telecommunications systems division at the U.S. Department of the Interior in Washington, D.C. "It's difficult to justify for the added cost without some practical applications."

As computing and telecommunications draw closer together, a lack of common experiences has prevented the two industries from making an easy collaboration.

"We know the first applications Mac users will see are going to use the phone and the Mac for call management and desktop conferencing," said Jim Grivage, ISDN product manager for Pacific Bell of San Francisco. "At this point, we're working hard to understand Apple ISDN developers."

"Phone and computer people have both tended to want a coherent package from the other," said Paul Hurley, chairman and CEO of Cypress Research Inc. of San Jose, Calif., whose PhonePro telephone-management software, due next month, will support ISDN. "But that is nearly impossible because telecom is where the computer industry was in 1979. No one has any idea what it will be in five years, but they know it will be huge."

In the meantime, users are having difficulties selling their companies on ISDN investments.

"ISDN isn't cheap, and it will be difficult to justify because it's only a money saver," said a systems manager with a large financial company who wished to remain anonymous. "Investment these days is going only to moneymaking projects." □

Making the Mac work with ISDN

Mac users have three choices for ISDN connections.

- **Cards.** Apple last week introduced its $1,099 ISDN card for the NuBus, which already faces competition from European third-party cards, such as the $995 Planet card from Euronis, distributed by Technologists in Interactive Communication of Montreal.
- **Terminal adapter.** Atlanta-based Hayes Microcomputing Products Inc.'s $1,600 ISDN System Adapter, an external interface that connects to the modem port, lets users control ISDN lines through the Hayes AT-command set.
- **Network devices.** ISDN-capable routers can provide network users access to wide-area network services through dedicated ISDN lines. Among the routers now available are the $2,195 H-Server from San Diego-based Solana Electronics, and Syncrouters, priced between $1,895 and $2,495, from Engage Communications Inc. of Aptos, Calif.

GlobalGATE: Novel E-mail options

By Nathalie Welch

Williston, Vt. — Shore-to-ship electronic mail? With Solutions Inc.'s new GlobalGATE gateway, Microsoft Mail and QuickMail users can send messages over nearly any medium through AT&T EasyLink Services.

The $395 GlobalGATE, due by month's end, will enable five users of these E-mail packages to send messages via EasyLink's wide range of delivery options, including fax, worldwide telex and Mailgram, Priority Letter, telegram, cablegram, and even shore-to-ship. GlobalGATE via AT&T EasyLink also provides access to X.400 messaging systems, enabling E-mail transmissions with enclosures.

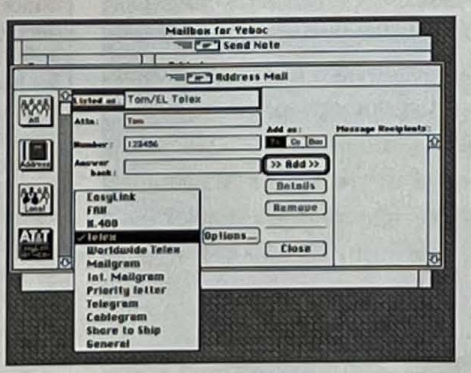
GlobalGATE operates in the background and resides on the same Mac that runs either the QuickMail or Microsoft Mail mail server. To QuickMail users, access to AT&T EasyLink services appears as a selectable mail center, while Microsoft Mail users will see an icon that leads to the program's addressing window.

Extra clients are $195 for five, $345 for 10, $595 for 20 and $1,250 for 50.

AT&T EasyLink services were established in late 1990 when AT&T acquired Western Union's Business Services, which included the EasyLink E-mail services. AT&T added its electronic data-interchange capabilities and X.400 support.

The gateway requires an AT&T EasyLink Services account and Microsoft Mail 3.0 or CE Software Inc.'s QuickMail 2.5.

Solutions Inc. is at P.O. Box 783, 30 Commerce St., Williston, Vt. 05495. Phone (802) 865-9220; fax (802) 865-9224. □



Solutions' GlobalGATE gateway links Microsoft Mail or QuickMail users to the many delivery options of AT&T EasyLink Services, as well as to X.400-based mail systems.

Gateways BRIEFS

Port Authority lets all share LaserJet

Sunnyvale, Calif. — ASP Computer Products Inc. is shipping a device that allows up to 15 Macs, IBM PCs and compatibles, and VAX or HP3000 workstations to share a Hewlett-Packard LaserJet printer.

Port Authority provides eight, 10 or 16 protocol-independent ports that can be configured for input from or output to stand-alone devices. For instance, a single output port can connect to input ports from several kinds of computers.

MacPrint, an ASP driver, provides HP interface emulation on the hardware level, so Mac users must configure Port Authority and the HP LaserJet using line commands from a text editor.

Port Authority with eight ports sells for $695, the 10-port model is $875 and the 16-port is $1,375.

ASP Computer Products Inc. is at 1026 W. Maude Ave., Suite 305, Sunnyvale, Calif. 94086. Phone (408) 746-2965; fax (408) 746-2803.

Helios USA cuts price of EtherShare 2.0

Cupertino, Calif. — Helios USA has announced a substantial price reduction for its Mac-to-Unix network integration software, EtherShare 2.0. A collection of Unix applications, EtherShare provides Macintosh file and print server services that reside on a Unix workstation or mainframe.

EtherShare servers now sell for $4,995 for a version that runs on a Unix workstation and $5,995 for the mainframe version. Both versions include support for 245 users. Previously, EtherShare was priced from $3,200 to $27,500, depending on the number of users the server would support.

Helios USA is at 998 W. Lynn Way, Suite 4, Cupertino, Calif. 95014. Phone (408) 255-2503; fax (408) 255-3298.

Forval angles modems at Macs

Midvale, Utah — Forval America Inc., a manufacturer of modems for the IBM PC and compatible market, has begun targeting the Mac market with its high-speed 14.4 Kbps Forval SA14400 modem.

Priced at $1,245, the V.42bis modem now comes bundled with a coupon that lets owners purchase MicroPhone II communications software and a Mac-to-modem cable for $195.

Forval America Inc.'s Modem Division is at 6985 Union Park Center, Suite 425, Midvale, Utah 84047. Phone (801) 561-8080 or (800) 367-8251; fax (801) 561-8777.

Allied Telesis offers two 10BASE T micro repeaters

Mountain View, Calif. — Allied Telesis Inc. last month shipped two 10BASE T micro repeaters with internal power supplies.

Available now, Allied's $549 eight-port AT-MR820T and $449 four-port AT-MR420T allow users to connect workgroups to fiber-optic, coaxial or twisted-pair backbones. The repeaters also can provide stand-alone connectivity for small networks.

Allied Telesis Inc. is at 575 E. Middlefield Road, Mountain View, Calif. 94043. Phone (415) 964-2771; (415) 964-0944.

Remote

From Page 20

tem software. Client access is controlled with the same User & Groups control panel used in System 7.0's file sharing. Installing AppleTalk Remote Access adds options to users' configuration panels. Each user, except Guest, can be allowed to call in, and, optionally, can have a call-back number assigned. The call-back option offers better security and allows the host side to absorb most of the costs of the connection. It will be great for workers at home but not as useful for portable users on the road.

To help managers maintain control over access to their networks, Apple has created a utility that requires a password before allowing users to set up their Macs for dial-in callers. This utility should be available separately through APDA.

Users can check a connection activity log on each host Mac to monitor access, including caller's name and connection duration. The log also can be set to record unauthorized log-in attempts.

Just like being there? Remote connections are based on connection documents. The document specifies your user name, password and the phone number you want to dial. You can save your password to simplify connections if you wish. Remote Access also can be configured to periodically remind you that you are connected.

Connections also can be initiated in three other ways: You can drag and drop a connection document on the Remote Access application icon; hold down the Option key and double-click on a connection document; or double-click on an alias of a file, folder or volume from the remote host Mac.

Unlike some competing products, AppleTalk Remote Access is designed to let users access both local and remote resources. But to resolve network conflicts when calling from one network-based Mac to another, users have to turn that capability off. Apple provides an object in the Network control panel that allows you to set your network to Remote Only.

Preliminary tests using a prerelease version of AppleTalk Remote Access demonstrated equal or better performance than other products, but there's a price: The Chooser is not updated after you make the initial connection.

Conclusions. Managers may find it hard to justify the cost of a modem on every desk, not to mention the security risks. Still, AppleTalk Remote Access promises to be a popular product with users.

Shiva and Cayman Systems Inc. this week will announce stand-alone, multiline dedicated AppleTalk Remote Access servers designed to address both security and cost concerns.

As an extension of system software and as a personal productivity tool, Remote Access dovetails nicely with the file-sharing features offered in System 7.0, and allows you to access network services, especially file print and mail servers, from remote locations. □

Remote Access comes in other flavors, too

Users who need to dial into an AppleTalk network from home or from the road can choose from a number of third-party products that usually offer dial-in as a bonus to other services.

▸ **PhoneNET Liaison** from Farallon Computing Inc. of Emeryville, Calif., is a $395 software router that lets users dial into a Mac and thereby access a node, zone or entire network. Each user can be given a different password and call-back identification, similar to Apple's implementation in Remote Access.

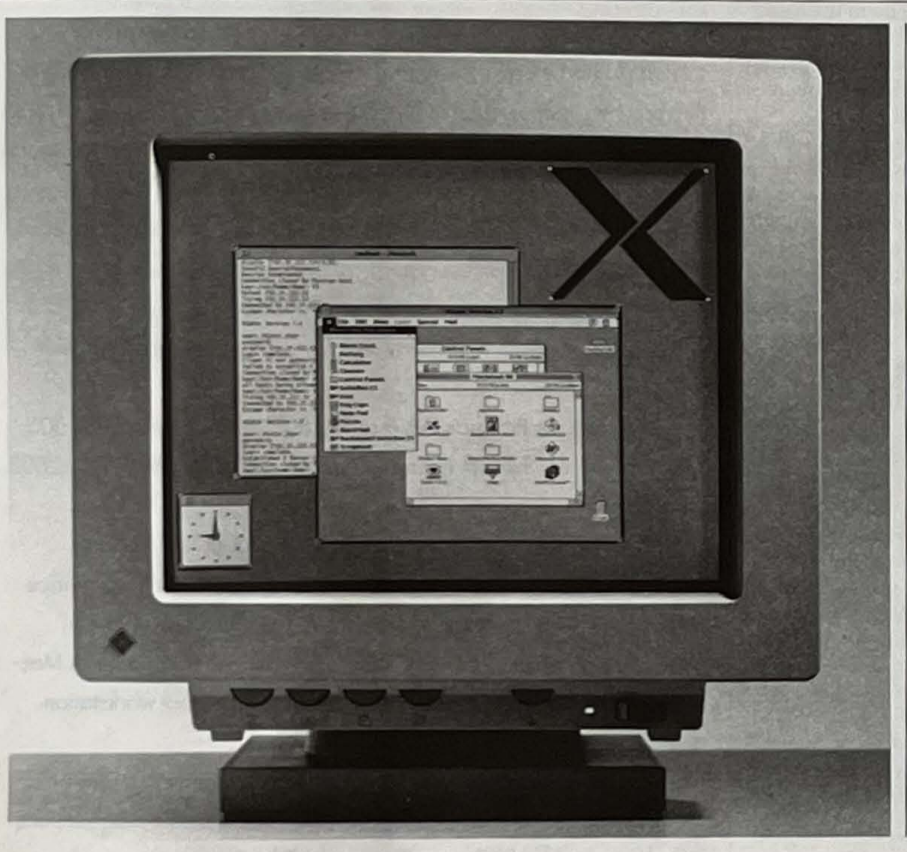
But Farallon's product is mainly a network router. Liaison allows you to internetwork up to five different AppleTalk LANs whether they are LocalTalk, token-ring or Ethernet. Using Liaison you also can connect remote networks asynchronously or allow stand-alone users to dial in and access services on the network.

▸ **NetModem/E** from Cambridge, Mass.-based Shiva Corp. is one of a series of Shiva devices that lets Mac users dial into AppleTalk networks without host Macs. The $2,249 NetModem/E won't recognize different dial-in users so it can't offer dial-back. Access can be protected with a general password.

NetModem offers modem services to the network and can be used to link remote networks as well.

▸ **Timbuktu/Remote** from Farallon offers a different sort of access. The $195 program lets users access remote networks by remotely controlling the Mac it dials into. Although it is primarily designed for users who need to share a screen, such as a manager who is troubleshooting problems, the program also offers file transfer.

Timbuktu/Remote can be password protected. — *By Jonathan A. Oski*



MACS ARE SHOWING UP IN THE LEAST X PECTED PLACES.

Yes, that is a Macintosh desktop you are looking at. And, yes, that is a UNIX workstation.

Now you can use software like Microsoft Word, Aldus Persuasion and Informix WingZ from a standard X window on any Sun, Digital, Hewlett-Packard or IBM workstation or X terminal. In fact, any application for the Macintosh is now available for your X server platform.

With XGator. An extraordinarily elegant and versatile X Window client for the Macintosh operating system that lets you remotely operate any Macintosh from anywhere on the network. From down the hall or across the country.

With XGator, you get a full bit-mapped representation of the entire Macintosh desktop. You control the desktop with your workstation mouse and keyboard. If a Macintosh user sees it, you see it, too.

With XGator installed on a Macintosh, any X workstation user can access the Macintosh from anywhere on the network. No additional workstation software is required.

As a user, XGator lets you do things like cut text from a document in your X terminal window and paste it into a Macintosh application document via the XGator window, using standard X window clipboard space. No complex file transfers.

If you're managing Macintosh networks, XGator lets you remotely check, reconfigure and even reboot any XGator equipped Macintosh on your LocalTalk or Ethernet network. You can reconfigure AppleTalk hubs, bridges and routers.

XGator Requirements

- Macintosh System 6.0.x or 7.0
- MacTCP
- Conforms to X Windows X11 (R4 or earlier) system software
- Supports OSF/Motif, DECwindows, and Open Look window managers

You can even run AppleTalk network analysis or network management software. In short, XGator gives you complete control of remote AppleTalk nodes, without ever leaving your workstation.

And if you're a technical support specialist, you can log on to users' Macintoshes and solve problems while they watch. Right from the workstation.

Naturally, XGator works with all the most popular window managers for UNIX workstations including OSF/Motif, Open Look and DECwindows. Plus it comes fully supported by what is widely acknowledged to be the most experienced customer support team in the business.

And best of all, you can put XGator to work for you right away. It's simple. To find out how, just call **800-473-4776,** 617-494-1999 or fax 617-494-9270.

Supported X Server Platforms

XGator 1.0 has been tested for compatibility with most models from the following vendors:

Sun	NCD	Visual
HP	NeXT	Sony
DEC	MIPS	Silicon Graphics
IBM	Wyse	Stardent

CAYMAN SYSTEMS Inc.

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Alisa

From Page 20

ers; Unix-to-Unix Copy Protocol (UUCP)-compatible electronic mail; and terminal emulation for direct Unix shell access from any Mac. Users log onto the file server as though it were an AppleShare server.

AlisaTalk for Unix sells for $4,595 for Sun SPARCstations and $5,595 for Sun SPARC-servers, Digital DECstations/servers and IBM RS/6000. Unlimited users are permitted on each server. A Sun SPARCstation LocalTalk Card, at $1,295, will allow Unix applications to share LocalTalk printers with Macintoshes.

▸ **Terminal Emulation.** The Echo line of applications can emulate most VT-series DEC terminals, as well as Tektronix 4010/4014 series graphic terminals.

The emulators can run multiple simultaneous text and graphic sessions to one or many hosts over different connections, such as LAT-to-DEC and Telnet-to-Unix hosts, using Apple's Macintosh Communications Toolbox and MacTCP. They both work with System 7.0 and provide complete ReGIS and SIXEL graphics implementations.

Echo 330, for $199, supports black-and-white emulations, while the $299 Echo 340 also supports VT340 displays on color Macintoshes.

▸ **X Window.** Echo X, an X Window display server for the Mac, was also released last week. The program, which works with host-based graphical-interface tool kits such as OSF/Motif, OpenLook and DECwindows, lets Mac users run X-based applications such as word processors, paint programs and databases remotely.

The $295 application implements revision 4 of X11, and includes support for "rootless windows," which handle window resizing and repositioning on the local Mac rather than with the host. It supports TCP/IP and DECnet protocols, using Alisa's TSSnet and Apple's MacTCP.

Users can customize the terminal's eight-bit color mappings for display using a built-in database.

Alisa Systems Inc. is at 221 E. Walnut St., Suite 175, Pasadena, Calif. 91101. Phone (818) 792-9474; fax (818) 792-4068. □

Cypress

From Page 20

[of the program] on your screen."

Keeler has prototyped several applications, including an automated phone attendant, fax response and voice mail, using the program.

Compatible with Apple's new Telephone Manager technology, an extension to the Macintosh Communications Toolbox, PhonePro supports Caller ID where the service is available.

Using Caller ID, PhonePro can be set up to process a call based on the phone number of the caller, said Cypress. PhonePro also comes with interface tools to link it to Microsoft Corp.'s Microsoft Mail and CE Software Inc.'s QuickMail, so that in-house developers can integrate voice and electronic mail.

To make PhonePro more affordable to large installations, the company early next year will ship a cheaper runtime version of the software that can execute, but not create, scripts.

Cypress will ship its own ISDN connector in December. It is expected to cost about $600, but final pricing has not been set.

Cypress Research Corp. is at 240 E. Caribbean Drive, Sunnyvale, Calif. 94089. Phone (408) 752-2700; fax (408) 753-2734. □

InterCon extends aliases to NFS

By Mitch Ratcliffe

San Jose, Calif. — Mac aliasing across a TCP/IP network was demonstrated by InterCon Systems Corp. at last week's InterOp '91 conference here.

Scheduled to ship next month, the $295 NFS/Share 1.1 is the first System 7.0-compatible version of InterCon's Network File System client for the Macintosh.

Supporting System 7.0's aliasing, the program will let users create an alias that points to their NFS server. Users can access that server by double-clicking the alias from a Mac on a TCP/IP network to which their server is connected.

NFS/Share 1.1 maps System 7.0's file-sharing commands or System 6's Get Privileges commands to NFS privileges. As a result, users now can set access permissions and ownership for both Mac and NFS files through the standard Mac mechanisms. NFS/Share 1.1 is also 15 percent to 20 percent faster than the previous version, according to InterCon.

Upgrades are free. Apple's TCP/IP communications stack, MacTCP, comes with NFS/Share.

InterCon Systems Corp. is at 950 Herndon Parkway, Suite 390, Herndon, Va. 22070. Phone (703) 709-9890; fax (703) 709-9896. □

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Sonic Systems introduces it's Macintosh Ethernet Sale
Ether TnT and Ether TwP
The Ether TnT (Thin Coax) and Ether TwP (Twisted Pair) provide ethernet connectivity on any Macintosh with a Nubus or PDS slot for just $199. All (except Mac LC) boards have on-board Thick Coax connectors. The IIsi & LC boards even have a socket for a math co-processor ($149).
MagicSlot IIsi and SE/30
The MagicSlot provides an ethernet connection while preserving the functionality of the PDS slot in the Mac IIsi and SE/30 for an additional standard enhancement such as a video board or accelerator. Both boards are available in Thin Coax and Twisted Pair versions, and the MagicSlot IIsi even has a socket for a math co-processor ($149).
StarBase T Hub
StarBase T is the lowest priced 10 Base-T Hub on the market. It is available in 7 and 13 port versions. The StarBase T (6 Twisted Pair ports and 1 AUI port) is just $499. The StarBase T+ (12 Twisted Pair ports and 1 AUI port) is only $699. An optional BNC port is available for either hub ($99).
All Sonic Systems Ethernet boards come with System 7.0 drivers, a Five Year Warranty, and Inside Ethernet diagnostic software. They are all compliant with AppleTalk Phase I and Phase II protocols, and are upgradeable to 64K of high speed Static RAM for an additional $25.
Features | Sonic | Asanté
Thin Coax & Twisted Pair for SE, SE/30, II family, IIsi and LC | ✖ | ✖
FPU Socket for IIsi and LC | ✖ | ✖
System 7.0 Drivers | ✖ | ✖
5 Year Warranty | ✖ | ✖
Ethernet with Passthrough PDS for IIsi and SE/30 | ✖ |
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12 (RJ-45) Port Hub | $699 | $999
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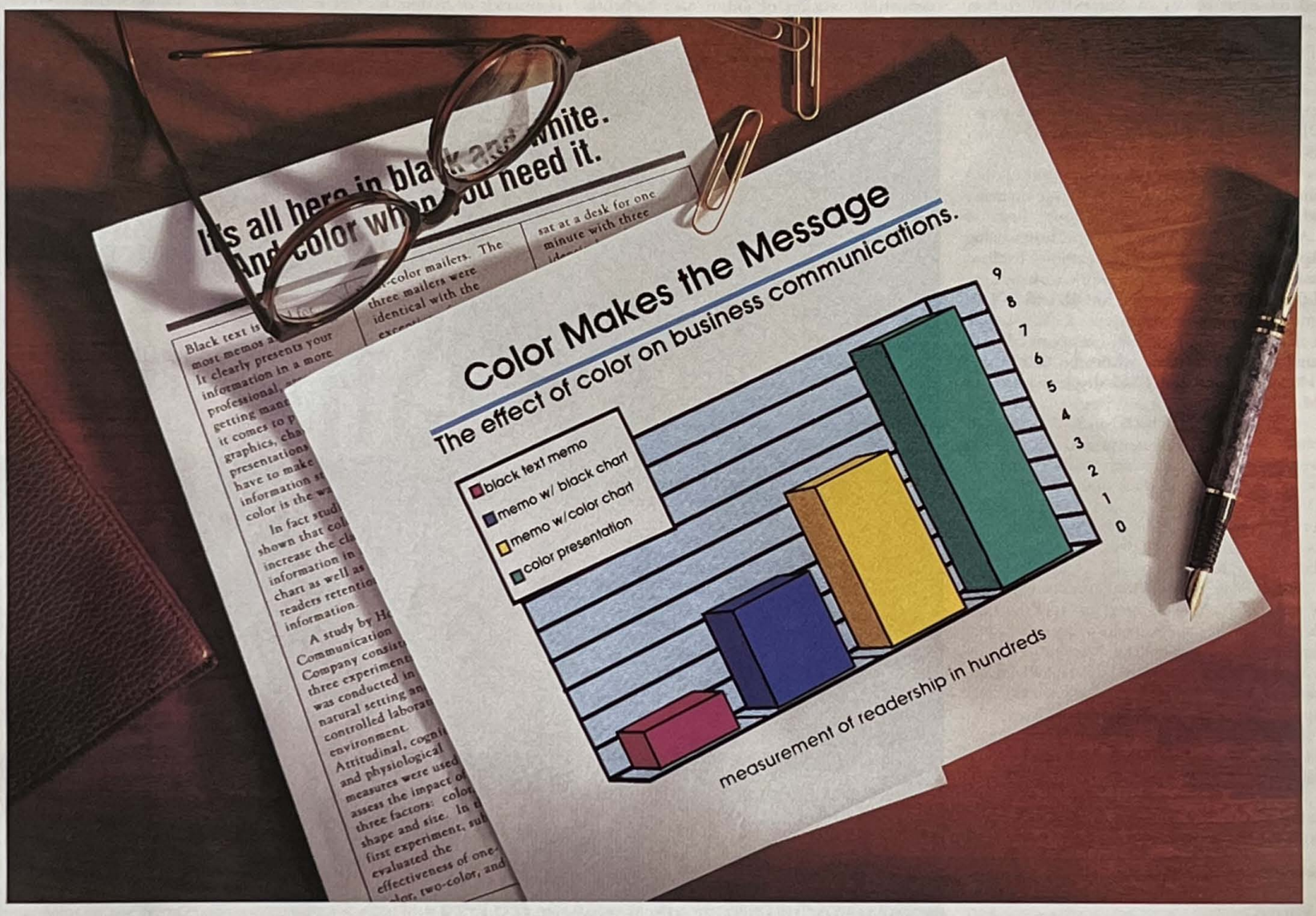
What's the business world coming to?


It's all here in black and white.
And color when you need it.
Color Makes the Message
The effect of color on business communications.
black text memo
memo w/ black chart
memo w/color chart
color presentation
measurement of readership in hundreds

Now, more Macintosh users can get their hands on some color. Without giving up great black and white. Hewlett-Packard makes it all possible with the new HP DeskWriter C printer. Impressive black and white. And thousands of colors. For just $1,095.*

The best features of HP's DeskWriter haven't changed. You'll still get the crisp, clean, laser-sharp output. The 300 dot-per-inch resolution. And you'll still have all the built-in, scalable fonts and graphic capabilities that can make such a difference in your documents and presentations.

Take all that, add a nearly endless choice of attention-getting colors, and Macintosh users have got one very valuable partner. One that's a pleasure to work with. With the DeskWriter C, you just plug, play, and print. On plain paper or transparency. Of course, it's Macintosh and System 7 compatible.

With the DeskWriter C, Hewlett-Packard introduces a colorful new generation to its family of inkjet printers. A family that stands for affordable quality. Quality that's backed by a three-year warranty.

*Suggested U.S. list price. †In Canada, call 1-800-387-3867, Ext. 2646. **Offer valid through January 31, 1992. No purchase necessary; void where prohibited.

Affordable color. Introducing the HP DeskWriter C printer. Only $1,095.

So when other Macintosh users ask you what's new, tell them to get ready for a splash of color. For more interesting graphs and charts. For impressive cover pages and for compelling overhead presentations. All for under $1,095.

If you'd like to see some samples of the DeskWriter C's work, call **1-800-752-0900, Ext. 2646.**† Or visit your nearest authorized HP dealer and sign up for a chance to win a Caribbean cruise for two.** Color is what the business world is coming to.

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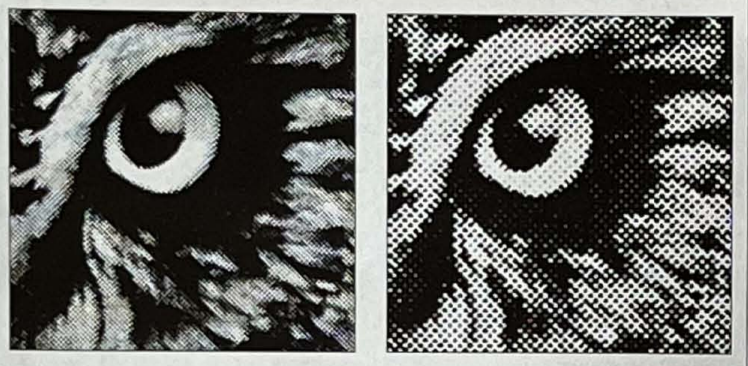
Will desktop halftones make grade?

Apple, LaserMaster boost photo output



The image on the left was printed with the LaserWriter IIg using the printer's PhotoGrade gray-scale technology. The image on the right was printed without PhotoGrade.

By Neil McManus

San Jose, Calif. — Apple CEO John Sculley has a dream: Mac users of all stripes soon will be placing halftoned photos in everything from school book reports to company newsletters.

"The use of photographs in documents is going to be expected," Sculley said. "Once the concept takes hold, everyone's going to jump on the bandwagon."

Sculley outlined his vision when he introduced Apple's new LaserWriter IIf and IIg and Apple OneScanner at the Seybold Computer Publishing Conference & Exposition here this month.

Apple's new LaserWriters contain PhotoGrade, a chip-based technology that allows the IIf and IIg to output images with 65 levels of gray, about seven times the number of gray levels offered by previous LaserWriters. PhotoGrade accomplishes this by varying the size and pattern of dots to produce more gradual gray transitions (see MacWEEK, Oct. 1).

With slogans such as "redefining the printed page," Apple is attempting to rally user demand for halftoning on the desktop. "It's a typical Apple marketing move: introduce new products and create a new need for them," said Marc Boer, an analyst at BIS Strategic Decisions of Norwell, Mass.

Although it's unclear whether there is a pent-up demand for improved halftoning, a number of Seybold conference attendees seemed intrigued by PhotoGrade. Pui Tong Ho, a senior researcher at Scripps Research Institute in La Jolla, Calif., said he is thinking of upgrading his department's LaserWriter IINTX to the capabilities of the IIg.

"We'd like to use photos in our in-house reports and presentations, but our NTX is pretty useless for halftones," he said. "When we print out a halftone of an animal, you can't even tell what kind of animal it is."

Even if Sculley's dream of photo-filled documents comes true, they won't all be coming off Apple laser printers. Apple's competitors are already introducing their own improved halftoning technologies. LaserMaster Corp. of Eden Prairie, Minn., this month unveiled TurboGray, a software upgrade that the company said allows its laser printers to achieve 256 levels of gray at up to 141 line screens. TurboGray is expected early next year. □

RasterOps technology promises on-screen editing of CMYK images

By Carolyn Said

San Jose, Calif. — RasterOps Corp. this month announced new technology that promises to let users edit CMYK images on screen in real time and improve color accuracy.

Based on a custom application-specific integrated circuit (ASIC) chip running at 100 mips, RasterOps' solution was introduced at the Seybold Computer Publishing Conference & Exposition here this month.

The RasterOps hardware instantly converts CMYK (cyan, magenta, yellow, black) image data to RGB (red, green, blue) for screen display, the company said.

In addition to creating a more responsive work environment, this reduces storage requirements, since software can store images in just CMYK, rather than in both CMYK and RGB formats, RasterOps said.

The chip also works in RGB mode, offering similar performance to existing graphics display cards. Since CMYK-to-RGB conversions are performed on a pixel-by-pixel basis, it can display RGB and CMYK data simultaneously.

The chip offers a more-accurate hardware controller for gamma correction, RasterOps said. Current display systems use eight-bit DACs (digital-to-analog converters), which limit color information on screen whenever gamma correction is performed. RasterOps' new chip will use nine-bit DACs, allowing gamma correction to be performed without color degradation, the company said.

RasterOps said it will introduce a family of display adapters based on the technology later this year.

Color applications will need to be adapted to take advantage of the chip's capabilities. A free application developer's tool kit will be available this month.

RasterOps Corp. is at 2500 Walsh Ave., Santa Clara, Calif. 95051. Phone (408) 562-4200; fax (408) 562-4065. □

Printers put the heat on imagesetters

NEWS ANALYSIS

By Lawrence Stevens

One of the most important new factors in desktop publishing today is the introduction of plain-paper printers with horizontal resolutions of 1,200 dpi. It's true that these machines do not approach the 2,540-dpi and higher resolutions offered by imagesetters. But for many applications, output from these high-resolution laser printers is indistinguishable to the naked eye from that of their imagesetter cousins. As a result, an increasing number of companies are able to accomplish beginning-to-end desktop publishing by bringing the printing operation in-house.

Currently, there are three printer companies in this high-resolution marketplace. Available products include the $13,990 720 IQ Pro-II and the $17,990 Pro-III, two 1,200-by-600-dpi machines from Printware Inc. of St. Paul, Minn., that print in 8.5-by-11-inch and 11-by-17-inch format, respectively. Also available is the $16,995 LaserMaster 1200, a

See Printers, Page 32

Microsoft joins multimedia ranks, rolls out MPC Windows standard

By Carolyn Said

New York — Kaleida is still barely a twinkle in Apple and IBM Corp.'s eyes, but the Multimedia PC is already here.

Redmond, Wash.-based Microsoft Corp., along with more than 70 hardware and software companies, rolled out the computing platform here last week, hoping to corner IBM PC and compatible users who want to create and play multimedia documents.

The Multimedia PC (MPC) specification is based on an 80286 or better Intel processor, 2 Mbytes of RAM, a VGA graphics card, a CD-ROM drive, enhanced audio and Windows multimedia extensions. PCs that meet those requirements and software that can run on them are adorned with an "MPC" logo, as a seal of approval from the MPC Marketing Council, an association of computer companies.

Although many observers said they were disappointed by the minimal performance level of the base MPC machine, they predicted that MPC would tap into a huge market.

The council noted that more than 15 million existing PCs can be easily upgraded to meet MPC standards; several hardware vendors have announced upgrade kits.

"There are millions of Windows users. That's a force to be reckoned with," said Denise Caruso, editor of the San Francisco-based Digital Media newsletter. Caruso noted that Microsoft had attracted hundreds of developers, despite some intrinsic drawbacks of the base platform. "You can do a lot, but the

See MPC, Page 30

European graphics programs expected to flood U.S. market

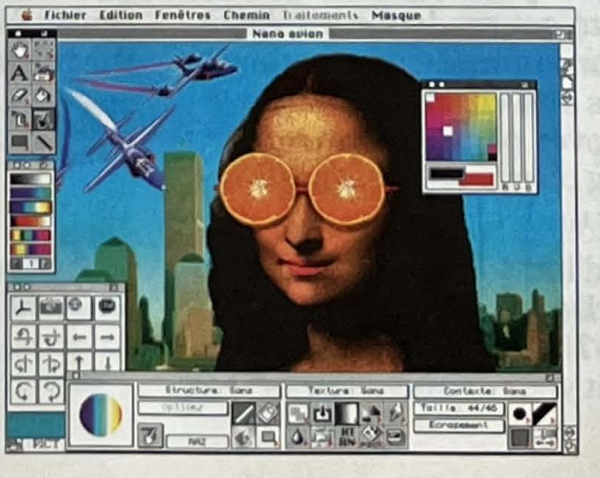
By Steve Rosenthal

Paris — A bevy of new graphics programs from Europe are slated to make a U.S. appearance over the next few months — providing their authors can find the right U.S. distribution deals. U.S. Mac users could soon have a new high-end 32-bit painting and image-editing program, several new 3-D modeling programs, and a new multimedia catalog package.

▸ **Art Mixer.** This flashy painting and editing program comes from French publisher GM Technologies. The company calls the package comparable in scope to Adobe Photoshop 2.0 but different in style and tone. Extensive tools and palettes support image creation, mixing, retouching, customization and transformation, and the program reads and writes PICT, Encapsulated PostScript, JPEG (Joint Photographic Experts Group) and PostScript files.

Art Mixer has already won several awards in Europe, including Apple France's Golden Apple award for the best new graphics program of the year. GM Technologies reportedly has been talking with a leading U.S. multimedia publisher, but no deal has been announced.

See Europe, Page 30



Art Mixer, a new painting and image-editing program from GM Technologies of Paris, will take aim at Adobe Photoshop if the program can find a U.S. distributor.

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FIFTH GENERATION SYSTEMS, INC

Scantext system packs processor

Color flatbed does slides and prints

By Matthew Rothenberg

Chicago — Mannesmann Scangraphic GmbH has rolled out the Scantext 1015 CS, a high-resolution flatbed color-scanner system that can capture and process transparent or reflective images and export them to the Mac.

The Scantext 1015 CS is available now for $95,000 from Scancorp, Mannesmann Scangraphic's North American Distributor.

The unit can scan transparencies ranging from 35mm to 8 by 10 inches or reflective art up to 10 by 15 inches. A charge-coupled device (CCD) array of 5,184 elements provides resolutions from 508 dpi to 3,556 dpi, depending on image size. Files can be saved in RGB (red, green, blue) TIFF at 12 bits per color. The device also can calculate CMYK (cyan, magenta, yellow, black) data, using proprietary software and its own internal processor.

The scanner automatically calibrates an image before each scan and offers an automatic sharpness filter. When scanning continuous-tone images, a densitometric measurement is made over 100,000 points per picture. The Scantext 1015 CS scans color images at 2mm per second, according to the company, which is based in Hamburg, Germany.

Users can select reproduction size (from 3.5 percent to 4,000 percent, in 0.1 percent increments); line art, monochrome or color mode; selection of dot gain in CMYK; and sharpness.

The Scantext 1015 CS includes a built-in Motorola 68030 processor, 896-Mbyte hard drive, 3.5-inch floppy drive, 9-inch monochrome monitor, keyboard and trackball. Scancorp will install an additional 896-Mbyte hard drive for about $3,500, the company said.

Scanned images can be transferred to the Macintosh over Ethernet, using the TCP/IP protocol, or via SCSI.

The Scantext 1015 CS will compete with the Smart Scanner PS from Scitex America Corp. of Bedford, Mass. The Scitex scanner, which also connects to the Mac, is available for $95,000.

Scancorp, a division of Scangraphic Ltd., is at 8609 W. Bryn Mawr, Suite 208, Chicago, Ill. 60631. Phone (312) 693-2900; fax (312) 693-2904. □

Europe

From Page 28

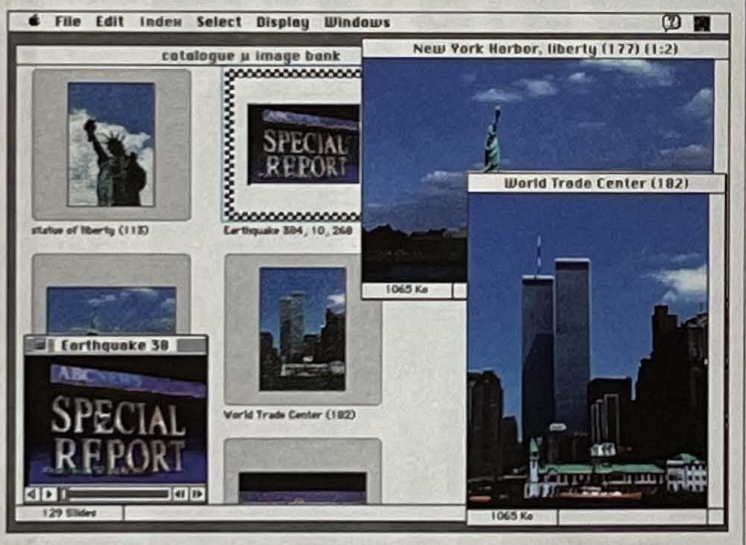
▸ **Zoom and Focus.** Abvent SA has two solid-modeling programs already available through selected U.S. dealers, but it is soon headed for wider international distribution.

Zoom provides high-precision modeling with Boolean operators (such as intersections and unions), simulation of surfaces and interactive multiview displays. The program, which lists for $2,500, supports PICT, PICS, RIB (RenderMan Interface Bytestream) and several other file formats.

Abvent also offers Focus, for users who prefer a lower-cost fast conception and design program with an option to move up later to Zoom. The $800 program is optimized for rapid mouse-driven construction of images in 2-D and 3-D.

Both programs can edit RenderMan shaders (surface treatments) and produce files compatible with Pixar's ShowPlace rendering and display program.

▸ **3D Turbo Render.** This package from Soft'X includes three complete programs: 3D Turbo Plus, a powerful 3-D geometric-modeling program with more than 800 functions; RenderMan, Pixar's processor for photo-realistic rendering; and RISE, a specialized editor for working directly with RenderMan language files.



Diapo, a new cataloging program for PICT images and QuickTime movies, will make its way to U.S. shores if its French publisher, Design & Périphériques Informatiques, gets its wish.

Soft'X has a few direct U.S. customers, but the company is still seeking better U.S. distribution. In France, the program lists for the equivalent of about $6,250.

▸ **Diapo.** Design & Périphériques Informatiques claims its Diapo is "the first program for administering multimedia documents." The program combines an image catalog that is compatible with both PICT images and QuickTime movies along with a database of corresponding keywords and data.

Diapo users currently can choose from existing compression routines (including hardware compression boards from Storm Technology Inc.), but the company says it will offer its own software-compression code early next year.

Under System 7.0 almost all Diapo operations can be be controlled externally using Apple events, allowing other programs to request images or sequences from Diapo's catalog.

GM Technologies is at 31-33, Avenue des Champs-Elysées, 75008 Paris, France. Phone 42-25-49-17.

Abvent SA is at 53, Avenue de Breteuil, 75007 Paris, France. Phone 47-34-43-98; fax 47-34-58-26.

Soft'X is at 6, Allée des Charpentiers, 78320 Le Mesnil St. Denis, France. Phone 34-61-99-29.

Design & Périphériques Informatiques is at 10, Avenue du Granier, Zirst, 38240 Meylan, France. Phone 76-41-83-84; fax 76-41-22-70. □

MPC

From Page 28

problem is it's pretty painful," she said. "You're dealing with a slow computer, a slow CD-ROM drive, low-capability graphics and not very whizzy audio."

Aleen Stein, a partner in The Voyager Company of Santa Monica, Calif., a Mac developer that has created some MPC applications, said: "Development for MPC is harder, longer and more expensive [than development for the Mac]. You can't turn an author loose; you need a programmer. Theoretically, it's a much bigger market [than the Mac]."

Tony Bove, editor of Bove & Rhodes Inside Report on Desktop Publishing and Multimedia in Gualala, Calif., said MPC will draw attention to multimedia. "Approval from Microsoft gives multimedia a mainstream flavor," he said. "This poses an enormous challenge to the Mac. There's a whole marketing message here that Apple is missing the boat; it's not making enough noise about multimedia." □

GA BRIEFS

MediaText authoring system to go to school

Ann Arbor, Mich. — MediaText, a multimedia authoring system aimed at teachers and students, will be released as a commercial product this month by Constructive Instruments Inc., based here.

Developed at the University of Michigan, MediaText, which looks like a word processor with margin notes, provides a simple way to annotate text with graphics, sound, animation and video clips (see MacWEEK, June 18).

The program will be available in two versions. MediaText 1.2, aimed at grades 7 through 12, sells for $89. MediaText Jr. 1.2, a simpler version aimed at grades K through 6, will ship in November. Its price has not been set.

MediaText will be distributed by Wings for Learning at 1600 Green Hills Road, Scotts Valley, Calif. 95067. Phone (408) 438-5502 or (800) 321-7511; fax (408) 438-4214.

Sonnet adds chorus of fonts to laser printers

Irvine, Calif. — Sonnet Technologies Inc. next month will begin shipping nine FontCards that add additional Adobe Type 1 fonts to laser printers from QMS Inc. and Texas Instruments Inc., as well as the Apple LaserWriter NTX.

The Sonnet cards store fonts in a printer's ROM, allowing them to print faster because they do not have to be downloaded.

Eight of the new FontCards, which retail from $399 to $499, hold standard Adobe Systems Inc. typeface collections: Best Sellers, Display Faces I and II, Helvetica Set, ITC Garamond Set, Futura Set, ITC Century Set, and Letter Gothic/Prestige Elite/Orator. The ninth cartridge adds 18 fonts to the TI microLaser PS17 to boost it to the standard set of 35 fonts.

Sonnet Technologies Inc. is at 18004 Sky Park Circle, Suite 260, Irvine, Calif. 92714. Phone (714) 261-2800; fax (714) 261-2461.

CheckList keeps tabs on PageMaker documents

Seattle — ElseWare Corp. recently upgraded CheckList, its program that reports on publication information for Aldus PageMaker documents.

CheckList, which reports on fonts, graphics, styles and print settings, is designed for people who regularly use service bureaus, ElseWare said.

Available now for $179.95, CheckList 2.0 has added "smart" compression that bundles together all the files needed to print a publication, including linked documents, fonts and custom kerning tables.

The program has expanded its scope beyond PageMaker: It now can report information from PostScript print-to-disk and Encapsulated PostScript files. This means it can be used with documents from any page-layout or graphics program, if they are saved in PostScript format.

Users can now attach electronic notes to documents and print the contents of CheckList information panels.

Registered users of CheckList 1.0, a shareware product, can upgrade for $89.95.

ElseWare Corp. is at 3201 Fremont Ave. N., Seattle, Wash. 98103-8866. Phone (206) 547-9623; fax (206) 632-7255.

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06. Government
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09. Education
10. Finance: Banking, Accounting, Insurance, Real Estate
11. Health, Medical, Legal
12. Non-Computer Retailer, Wholesaler, Distributor
13. Agriculture, Mining, Construction, Oil, Transportation, Utilities

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E. Project Manager
F. Art Director/Graphic Designer/ /Artist/Illustrator
G. Manager/Supervisor (not listed above)
H. Architect/Engineer
I. Systems Analyst/Programmer
J. Consultant/Advisor
K. Scientist
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N. Professional (Doctor,Lawyer, etc.)
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P. Representative
Z. Other (please specify) _____

3 Your department/function at this location:

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B. Research & Development
C. Communications/Publishing/Public Relations
D. Art/Creative Design
E. MIS/DP/Information Systems
F. Manufacturing/Operations/Production
G. Sales/Marketing
H. Administration/Management/Personnel
I. Accounting/Finance
J. Education/Training
K. Science
L. Consulting
Z. Other (please specify) _____

4 Are there Macintoshes or other PCs listed below owned and/or planned for purchase within 1 year at this location?

☐ Yes ☐ No

			Currently Owned (Quantity)	Plan to Buy (0-12 Months) (Quantity)
MODULAR	68030 Macintosh IIfx / IIci / IIcx / IIx	3		
	68030 Macintosh IIsi	4		
	68020 Macintosh II / LC	5		
	68000 Macintosh Portable	6		
COMPACT				
	68030 Macintosh SE/30	7		
	68000 Macintosh Classic	8		
	68000 Macintosh SE / Plus / 512	9		
OTHER				
	IBM/Compatible Micro	10		
	Workstation (e.g. Apollo, Sun)	11		

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5 If your firm's primary business at this location is retailing, reselling or consulting, how many Macintoshes are sold per year?

(Answer one only.)

A. Retailer: sold per year _____ (specify quantity)
B. Reseller: resold per year _____ (specify quantity)
C. Consultant: purchased by your clients through your firm's recommendations per year _____ (specify quantity)
☐ D. Not Applicable

6 Please check the Mainframe(s) or Minicomputer(s) at your location:

(Check all that apply.)

☐ 01. VAX ☐ 02. IBM Mainframe ☐ 03. IBM Minicomputer ☐ 04. Other ☐ 09. None

7 Do you purchase, recommend, specify or approve any of the Macintosh/Compatible products listed below?

☐ Yes (If yes, check all that apply): ☐ No

Computers
☐ 01. Macintoshes
☐ 02. Workstations
☐ 03. Minis, Mainframes

Connectivity
☐ 10. Local Area Networks
☐ 11. Modems
☐ 12. Micro/Mini/Mainframe Links
☐ 13. Communication Software

Peripheral Equipment
☐ 20. Laser Printers
☐ 21. Color Printers
☐ 22. Color Monitors
☐ 23. Hard Disks
☐ 24. Backup Systems
☐ 26. Scanners
☐ 27. Input Devices
☐ 28. Removable Storage

Add-In Boards
☐ 40. Memory Boards
☐ 41. Graphic Boards
☐ 43. Ethernet Boards
☐ 44. Video Boards

Software
☐ 50. CAD/CAM
☐ 51. Graphics
☐ 52. Desktop Publishing/Fonts
☐ 53. Desktop Presentation
☐ 54. Database
☐ 55. Programming
☐ 56. Accounting, Payroll
☐ 57. Spreadsheets
☐ 59. Project Management
☐ 60. Word Processing
☐ 61. Utilities
☐ 62. Multimedia

8 If you answered yes to the above computer products, for how many Macintoshes do you have this involvement?

(Select one only.) Write Answer Here ➨

01. 1000+
02. 500-999
03. 100-499
04. 50-99
05. 20-49
06. 10-19
07. 1-9
09. None

9 Please indicate the communications capabilities that the Macintoshes at your location have:

(Check all that apply.)

☐ 01. Local Area Network
☐ 02. Communicate with corporate workstations, mini or mainframe computers
☐ 03. Communicate with remote mini or mainframe computers
☐ 04. Communicate via modem
☐ 05. Voice/Data
☐ 09. Other (please specify)

10 Indicate how many employees there are in your entire company:

(Select one only.) Write Answer Here ➨

01. 1000 or more 02. 100-999 03. Under 100

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Macs take the stand, deliver with courtroom graphics

By Mitzi Waltz

San Diego — When eight insurance company lawyers allegedly wove a web of fraud and deceit in Southern California, it took a Mac to unravel the case for the jury.

The lawyers were accused of generating phony claims to collect millions of dollars in legal fees. The prosecution faced a daunting volume of information to present to the court — long lists of names, financial transactions, locations and dates.

Putting that data into chronologies, flow charts and graphs was a job for Legal Arts, a courtroom-display company here that has added a Mac II, a Mac Plus and an SE to its arsenal. Its next purchase will be a IIci with an extra-large hard drive.

Jim Gripp, Legal Arts vice president and regional manager, said few products have been developed specifically for this niche market. His staff uses a variety of graphics programs, especially in product liability cases where the mechanics of a device must be explained.

Cricket Graph from Computer Associates International Inc. is Legal Arts' mainstay for manipulating and charting data. Those files are fed into Aldus FreeHand or Claris Corp.'s MacDraw II to add type and smooth out any rough edges.

"For finals, either we go directly into production by outputting to an electrostatic plotter or a Linotronic," Gripp said, "or [we] enlarge an 8.5-by-11-inch document and add color." Legal Arts relies on service bureaus for Linotronic output.

Ninety-seven percent of all cases never make it to trial, he said. "Historically, our services have been seen as most useful in trials," Gripp said, "but we feel exhibits can be used to settle cases out of court. That's a subject for missionary work on our part."

The Mac also has attained prominence at San Francisco's Courtroom Graphics, where a bank of Mac IIs gets daily use. Owner Virginia Sargent said the Mac's greatest advantage is the time savings it can provide — essential in an industry where lawyers almost always wait until the last minute to order graphics. In one savings-and-loan case, the legal team's accountant delivered the statistics to be graphed just hours before the trial. "We just couldn't do it without the Mac," Sargent said.

Courtroom visuals once were limited to simple black-and-white enlargements of documents, but standards for today's displays come from the publishing and advertising world, said Lanny Aronoff of New York's The Acorn Group, which handles high-profile criminal cases, such as the infamous Central Park "wilding" case.

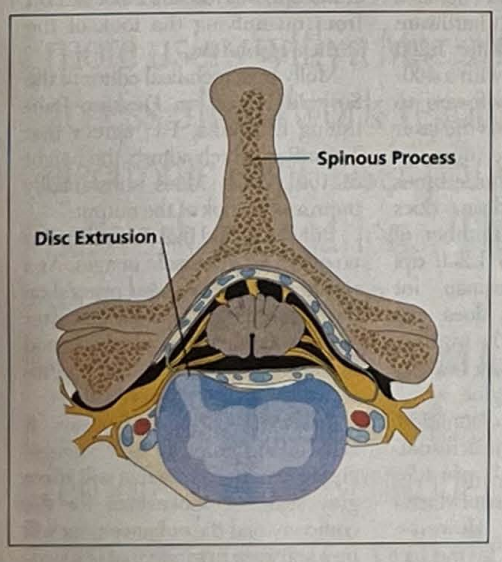
And while Aronoff's company makes use of Macs, he's not a full-bore Mac booster. "Computers can be terrific tools under the right circumstances, with the right talent, but they're not the panacea that people think they are," Aronoff said.

With projects that can bring in as much as $100,000 per case, he said, it pays to choose the best equipment for the job. That might mean using a Mac, but Aronoff said he often can use traditional methods to get quicker and better results. The smaller the firm, the more likely it is to depend on computers, he added.

"There is a rule of law in the federal guidelines that talks about demonstrative evidence not being unfairly prejudicial, but anything shown to a jury must be prejudicial or it won't have any weight or merit," Aronoff explained. Therein lies the main occupational hazard of courtroom graphics: making the product so slick that jurors (or worse, judges) feel suspicious. "Professional becomes polished, polished becomes slick, and so professional becomes pejorative," he said. "But even those 1950s, black-and-white exhibits still in use get criticized. And juries want to see color, like in USA Today or Time magazine — the things they're used to."

The next step for Macs in courtroom displays is computer video animation, said Courtroom Graphics' Sargent. "[It's] really sexy in our industry but very expensive," she said. "Attorneys are intrigued by computer animation, but they don't always realize that the application is for only a few types of cases."

Then there's the hassle of hauling your own equipment. Despite advances, Sargent said, "courtrooms are not set up for visual aids, and they probably won't be for another 20 years." □



Diane Ripley of Forensic Information Graphics in Portland, Ore., created this depiction of a herniated disc in Adobe Illustrator 3.0. It was used to describe an injury in a car-accident case.

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The Tacoma News Tribune scanned this Garfield comic strip into the Mac and colorized it in Adobe Photoshop according to the syndicator's specifications.

Newspaper puts the hue in humor with Photoshop

By Stuart Silverstone

Tacoma, Wash. — The Tacoma News Tribune uses Adobe Photoshop and a Mac IIfx to treat its readers to daily full-color comics pages.

Greg Anderson, the News Tribune's director of photography and graphics, said daily color comics give his paper something unique in its market. "One of our problems these days is trying to get young people to read newspapers," Anderson said. "Young people especially love to read comics. If they're colored, they like them even more."

Sheets of black-and-white, line-drawn syndicated comic strips are mailed weekly to the News Tribune, scanned in gray scale on a 24-bit flatbed scanner from Umax Technologies Inc. and placed in Photoshop for sharpening. There they are cropped into individual comic strips, saved by name and day in RGB (red, green, blue) format, and then colorized by staff artist Jacie Chun based on the specifications provided by the syndicators. Photoshop's Paint Bucket tool is used to fill line-drawn polygons and, if needed, the Paint Brush tool is used to first create a colored closed polygon. Backgrounds are rendered with graduated fills, blending from one color or shade to another.

Artwork is then converted to CMYK (cyan, magenta, yellow, black), saved as an Encapsulated PostScript file, and resized and paginated in a QuarkXPress template. That 30-minute layout procedure is expected to be automated soon with CopyFlow from North Atlantic Publishing Systems Inc.

The completed artwork is then output as four-color separations on an UltraSetter imagesetter using a Hyphen RIP (raster image processor) at 200 pixels per inch, the equivalent of a 100-line color screen.

The News Tribune's Mac system includes a Mac IIfx with 8 Mbytes of RAM, a SuperMac Technology Spectrum/8 graphics card, a SuperMac color monitor, a 325-Mbyte hard disk and a 650-Mbyte MacinStor removable-cartridge optical drive that handles about 125 Mbytes of images per day.

The time, trouble and expense of colorizing the News Tribune's comics is worth it, according to Anderson. "The one small advertisement we sell on the page generates enough revenue to more than justify the cost of the artist and equipment needed for colorizing," he said. □

NewGen beefs up printer line with 3 high-res RISC models

By Neil McManus

Fountain Valley, Calif. — NewGen Systems Corp. this month will ship three new RISC-based PostScript-compatible laser printers with resolutions of up to 800 by 400 dpi.

Called the Pro Series, the 8-page-per-minute printers are built around a 25-MHz Weitek XL-8220 RISC (reduced instruction set computing) processor.

The NewGen printers automatically switch among their standard AppleTalk, Centronics parallel and RS-232C serial ports. An Ethernet card, compatible with Novell, TCP/IP and EtherTalk protocols, will be available as a $499 option in December. A SCSI interface also is included so users can attach a hard drive to the printer to hold downloadable fonts.

NewGen's Pro Series includes:

- **TurboPS/840e.** Priced at $5,495, it offers 6 Mbytes of RAM and a resolution of 800 by 400 dpi. It comes standard with NewGen's image-enhancement technology, which smooths characters and line art.
- **TurboPS/840.** At $4,795, it has 6 Mbytes of RAM and also offers a resolution of 800 by 400 dpi.
- **TurboPS/630.** At $3,495, it contains 4 Mbytes of RAM and has a resolution of 600 by 300 dpi.

All three Pro Series printers can be upgraded to 32 Mbytes of RAM. NewGen's image-enhancement technology is available as a $699 option for the TurboPS/840 and TurboPS/630.

The NewGen printers use a PostScript-compatible interpreter from Weitek Corp of Sunnyvale, Calif. NewGen has abandoned plans to use Microsoft Corp.'s TrueImage interpreter in its printers because TrueImage does not work well with the company's enhanced-resolution technology, according to Andy Kicklighter, NewGen senior product marketing manager.

The Pro Series printers also emulate Hewlett-Packard Co.'s HP LaserJet Series II printer and HP 74745A plotter.

The NewGen printers come with a 200-sheet letter-size paper tray. An optional 200-sheet legal-size tray costs $75.

NewGen Systems Corp. is at 17580 Newhope St., Fountain Valley, Calif. 92708. Phone (714) 641-8600; fax (714) 641-2800. □

Mac presentations carry a tune with new music library

By Dartanyan L. Brown

Half Moon Bay, Calif. — Music-minded multimedia producers may want to audition the latest collection of ready-to-use music clips released this month from Passport Designs Inc.

A "sampler" called Media Music is available for $99 on both CD-ROM and floppy disk. It includes 20 clips of production music in various lengths (up to two minutes each) and musical categories, such as jazz, rock, blues and country.

This fall Passport will offer an extended library of more than 120 selections by subscription for $395.

By creating its own original music library, Passport said it hopes to ease the cost of licensing original music for multimedia producers. Purchasers of Passport's Media Music receive royalty-free rights to its use in non-commercial applications.

Media Music is available in a variety of formats, including CD-ROM, eight-bit and 16-bit digital audio, HyperCard-compatible snd files, and Musical Instrument Digital Interface files.

The MIDI files can be used with music-sequencer software to change the dynamics, tempo or key to fit the presentation, the company said.

Passport Designs Inc. is at 625 Miramontes St., Half Moon Bay, Calif. 94019. Phone (415) 726-0280; fax (415) 726-2254. □

Printers

From Page 28

1,200-by-400-dpi machine from Eden Prairie, Minn.-based LaserMaster Corp., that prints in 11-by-17-inch format. NewGen Systems Corp. of Fountain Valley, Calif., this month started shipping its $16,995 TurboPS/1200T, a 1,200-by-600-dpi laser printer capable of 11-by-17-inch output.

Don't toss the imagesetter. Jim Thompson, president of Executive Kwik Copy Inc. of Atlanta, recently bought a Pro-III. Thompson said that with items such as letterheads and most brochures, "you'd have to be an expert to tell the difference between a 1,200-by-600-dpi machine and imagesetter resolution. Actually, I don't think most experts would be able to distinguish the output."

But Thompson hasn't thrown out his imagesetter equipment. He uses it "for the real slick stuff — gray scale, three-or-more-color work, glossy paper or when someone insists on typesetting." But for his customers with plain text, line art or even photographs that will be printed on low-quality paper such as newsprint, opting to use plain paper can result in cost savings in the range of 500 percent to 1,000 percent.

While 1,200-dpi laser printer output may look as good to the naked eye as imagesetter output for fonts and line art, photographs and other gray-scale images do suffer when resolution is lower. Levels of gray are simulated by grouping dots into cells. There is a trade-off between the number of gray levels and the resolution. As a result, if you want anything approaching 256 gray levels and good-looking images, you'll need an imagesetter.

Thompson said that when laser printing meant 300- to 400-dpi resolution, his customers often would choose to pay the extra freight to get imagesetter output. But now, "it's hard for anyone to justify paying a penny more for imagesetter work when you can't tell the difference between that and what comes out of the laser printer," he said.

Save trips to service bureau. Because these new high-resolution laser printers are only about one-third the price of imagesetters and are much easier to maintain, end users also are opting to buy them to save trips to service bureaus.

For example, Dale Carman used to feel like he drove a shuttle bus to his printing company. As senior art director at Bernard Hodes Advertising Inc. of Houston, Carman is responsible for producing several hundred newspaper ads each week. Most of his work is done with high-end Mac graphics packages, and often the resulting files created problems for the Linotronic at the print house. When that happened, Carman had to drive across town to help fix it.

Recently Carman's company bought a LaserMaster 1200, and its cost per page is now about 5 cents compared with the $5 the service bureau charged; and turnaround time is now measured in minutes instead of hours or days. While there are still sometimes problems to be fixed, Carman said: "I can usually fix them in a few minutes; I don't have to drive across town to the service bureau and fiddle with a Lino that I'm not all that familiar with."

A cost-effective solution. Because high-resolution plain-paper printers are good for some, but not all, printing jobs, David Koslowsky, desktop production manager at Global Group Inc. of Fort Worth, Texas, finds the most cost-effective solution is to mix imagesetter and plain-paper technology on the same project.

Koslowsky's company produces technical documentation, research writing and illustration, and publishes a number of livestock journals, such as the Texas Longhorn Journal. It owns a Scitex imagesetter with a Macintosh gateway, which it had used for all its work. But Koslowsky said that doing so for fonts or line art was not cost-effective. So sometimes Global would use a 400-dpi laser printer for its text and line art, but, said Koslowsky, "it was very easy to see the work wasn't top gun."

Now with a new LaserMaster 1200, Koslowsky estimates he can do line art and text for about 5 cents a page, while saving the Scitex machine — which he said costs about $1 per page to operate — for color and black-and-white photographs or other gray-scale work.

Koslowsky credits this combination for helping his company win a contract to create a number of instructional manuals for a major mail-room machinery manufacturer. He said that by costing the project using a combination of plain-paper and imagesetter technologies, he was able to undercut the competition. But there was a hitch: The manufacturer had specified "imagesetter output." But he said when the executives from the manufacturer saw the output from the LaserMaster 1200, they dropped the demand for imagesetter output. "People still have to be educated to this technology," Koslowsky said, "but after they are, most want it incorporated in their work. It makes good economic sense."

Output has, up to now, been the last obstacle to complete desktop publishing. Many companies that have gained complete control of pre-press functions still have to send out their files to be printed.

The introduction of high-resolution plain-paper printers has not entirely eliminated the need to work with service bureaus. But it has greatly increased the number of jobs that can be performed under one roof and, as a result, is narrowing turnaround time and lowering costs. □

High-resolution printer output

720 IQ Pro II (Printware Inc.)

Freedom of the press belongs to those who own one. press

Pro-III (Printware Inc.)

Freedom of the press belongs to those who own one press

LaserMaster 1200 (LaserMaster Corp.)

Freedom of the press belongs to those who own one. press

Output samples are in 12-point Times, shown here in actual size and enlarged 420 percent.

SCREEN TEST

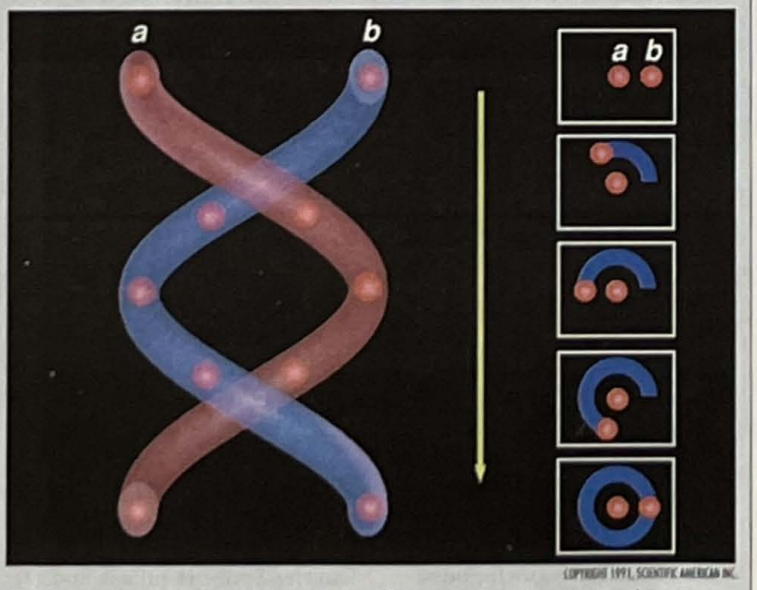
Mac makes quantum leap with physics illustration

New York — When Scientific American magazine asked Dave Poole to illustrate the interaction of identical particles, or "anyons," for an article about quantum mechanics that ran last May, he used the Mac to turn a complex idea into a relatively simple graphic.

Poole, illustrator and consultant with Zen Over Zero, based here, created helical intertwining tubes representing the particles' paths in Sculpt 3D from Byte by Byte Corp.

To simulate a translucent surface for the paths, Poole transferred the image to MacroMind Inc.'s 3D Works via the 3DGF (3-D Geometry File) data interchange standard for rendering.

In the program's RenderWorks module, Poole used the specular and transparent parameters to create a glassy texture. This process took about four hours.



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Poole also added the spheres representing the anyons in 3D Works. The alpha-channel information (the extra eight bits of information in 32-bit programs) in 3D Works allowed him to paste the spheres behind the translucent tubes, creating the illusion that they are within the paths.

Poole said that although alpha channels are generally used as masks or stencils, when an alpha channel is gray instead of black-and-white, it allows objects to be pasted through it as if it were a translucent stencil.

Poole then brought the image into Adobe Systems Inc.'s Photoshop as a PICT file to adjust color balance and contrast.

Using Photoshop's Airbrush tool, he added highlights to the ends of each tube to enhance the illusion that one tube is coming toward the viewer and one is going away. The text and arrow also were added in Photoshop.

— By Jennifer Ambrulevich

Solutions for resolution problems

Although Printware Inc.'s 720 IQ Pro-II and LaserMaster Corp.'s LaserMaster 1200 both have the same horizontal resolution, there are important differences between the two printers.

Printware's machines achieve their resolution through hardware by using an engine built for 1,200 dpi. LaserMaster starts with a 400-dpi engine and uses software to bring it up to 1,200 dpi. As the laser scans the page, software turns the laser beam on and off three times for every time the hardware does so. This increases the number of pixels from 400 dpi to 1,200 dpi horizontally. A spokesman for LaserMaster said he does not believe that increasing the number of dots per inch this way has any adverse effect on the engine.

A more important distinction, however, is in the vertical resolution. The 720 IQ Pro-II provides 600 dpi, while the LaserMaster 1200 has only 400 dpi. However, the picture is muddied by the fact that the LaserMaster 1200 includes TurboRes, LaserMaster's proprietary image-enhancement technology, which the company says makes most images look as if they were printed with higher vertical resolution. (LaserMaster used to claim its output looked like 1,200 by 1,200 dpi, but has since backed off from quantifying the look of the vertical resolution.)

Molly Joss, technical editor of the Seybold Report on Desktop Publishing in Media, Pa., agrees that TurboRes, which adjusts the height of the pixels, "does substantially improve the look of the output."

But she added that TurboRes has no effect on gray-scale images. As a result, gray-scale images printed on the 1,200-by-400-dpi LaserMaster 1200 probably will not look as good as those created on the 720 IQ Pro-II, which has 600 dpi vertically.

LaserMaster, however, says it is working on a new image-enhancement system that will affect gray scale. A spokesman for the company said the enhancement will be a software upgrade that is scheduled to ship early next year. So stay tuned. — *By Lawrence Stevens*

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Boldface EZRA SHAPIRO

Finally, publishers get tracking ware

I'd been wondering when we were going to start seeing the flood of scheduling software for desktop publishing. It doesn't have to be that fancy. All that's really needed is some technique for setting deadlines and checking off completion dates — a simple task, easy enough to computerize. Yet while several developers have produced sophisticated systems to monitor production flow in advertising and job printing, there's been a strange vacuum in software for publication scheduling.

A market for tracking tools certainly exists. Not only are many book and periodical companies taking the final steps to run their operations on the Macintosh as a smooth and seamless process, the small graphics departments that began with those ratty three-column newsletters have matured into full-scale publishers with heavy, serious deadlines.

When I started out in the magazine business in the early '70s, I worked as an editorial production manager. Those were the dinosaur days of letterpress and hot type, and we tracked each issue of each publication with a wall chart, scrawling in the dates page by page, element by element. It strikes me as downright odd that these antiquated wall charts are still in use when everything else has changed. A few brave souls have transferred their charts into spreadsheets, but I'd hardly call that computerizing the system. Generalized project management software really doesn't do the trick. For one thing, there's a steep learning curve; you have to master a new discipline with a complicated jargon. Then there's the question of overkill; Gantt and PERT charts are nifty but extraneous when you already have a clear idea of the critical path. Besides, while many of these packages are excellent for viewing the big picture, they're painful to use for tracking small line items. Every page in a magazine may run on a different schedule. What's needed is a super checklist and not much more.

A few brave souls have transferred charts into spreadsheets, but I'd hardly call that computerizing the system. Generalized project management software really doesn't do the trick.

So I was pleased to receive an evaluation copy of a product called JobTracker from InfoSolutions Inc. It's the best approach to the problem I've encountered yet.

JobTracker is a 4th Dimension database application (distributed with 4D Runtime), intelligently written with obvious input from real-world publishing production managers. You set it up in an hour or two by defining up to 50 production steps, declaring the maximum time period for each step and checking off which steps are on the critical path. Do a little bit of personalization, such as adding the titles of your publications and changing the formal department names provided with the program to the ones you use (switching "Compositor" to "Fred," for example), and you're rolling.

There are easy data-entry screens for day-to-day use, but the real strength of JobTracker lies in its capability to generate a wide variety of status reports. You can break out summaries of what's behind schedule, which departments are working on which items, what's due where today and so on. Furthermore (unlike the wall charts), the reports need not be restricted to one issue of one publication; you can tell at a glance where absolutely everything stands.

JobTracker comes in two varieties: one module for periodicals and another for book publishing, each for $695. Site licenses are available, and the modules can be run on a network. Since my production background is in magazines, I can confidently endorse the periodical module. I'm a bit more diffident about the version for books, but it looks good to my inexperienced eye, and if it was designed with the same care and attention to detail as the periodical module I have no doubt that it's also excellent.

InfoSolutions Inc. is at 147A Silverdale Road, Julian, Pa. 16844. Phone (814) 355-7070; fax (814) 355-2983. □

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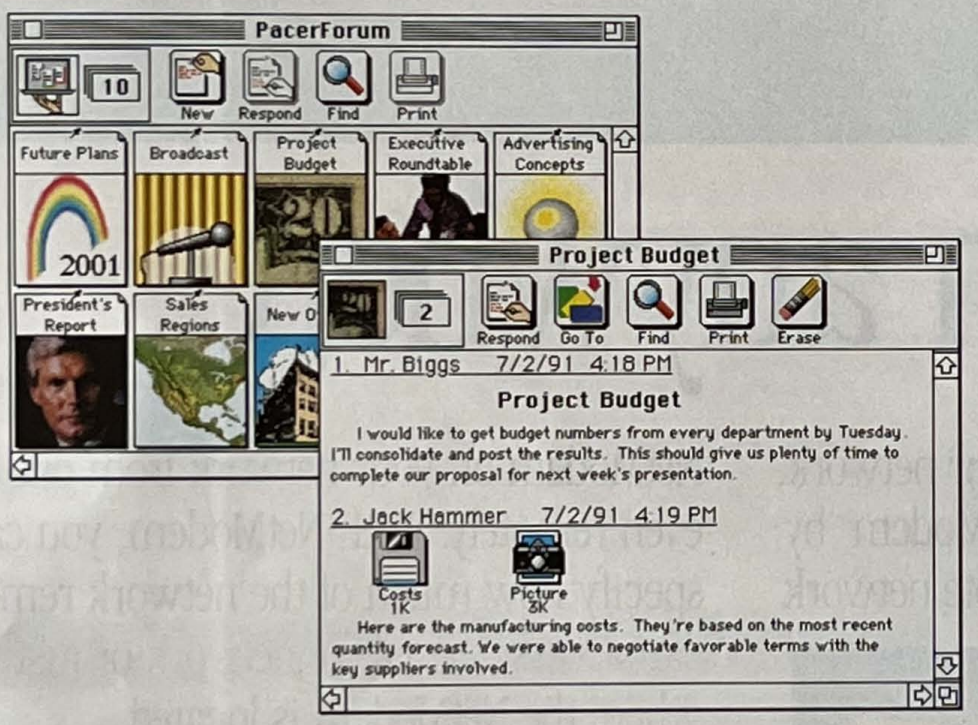

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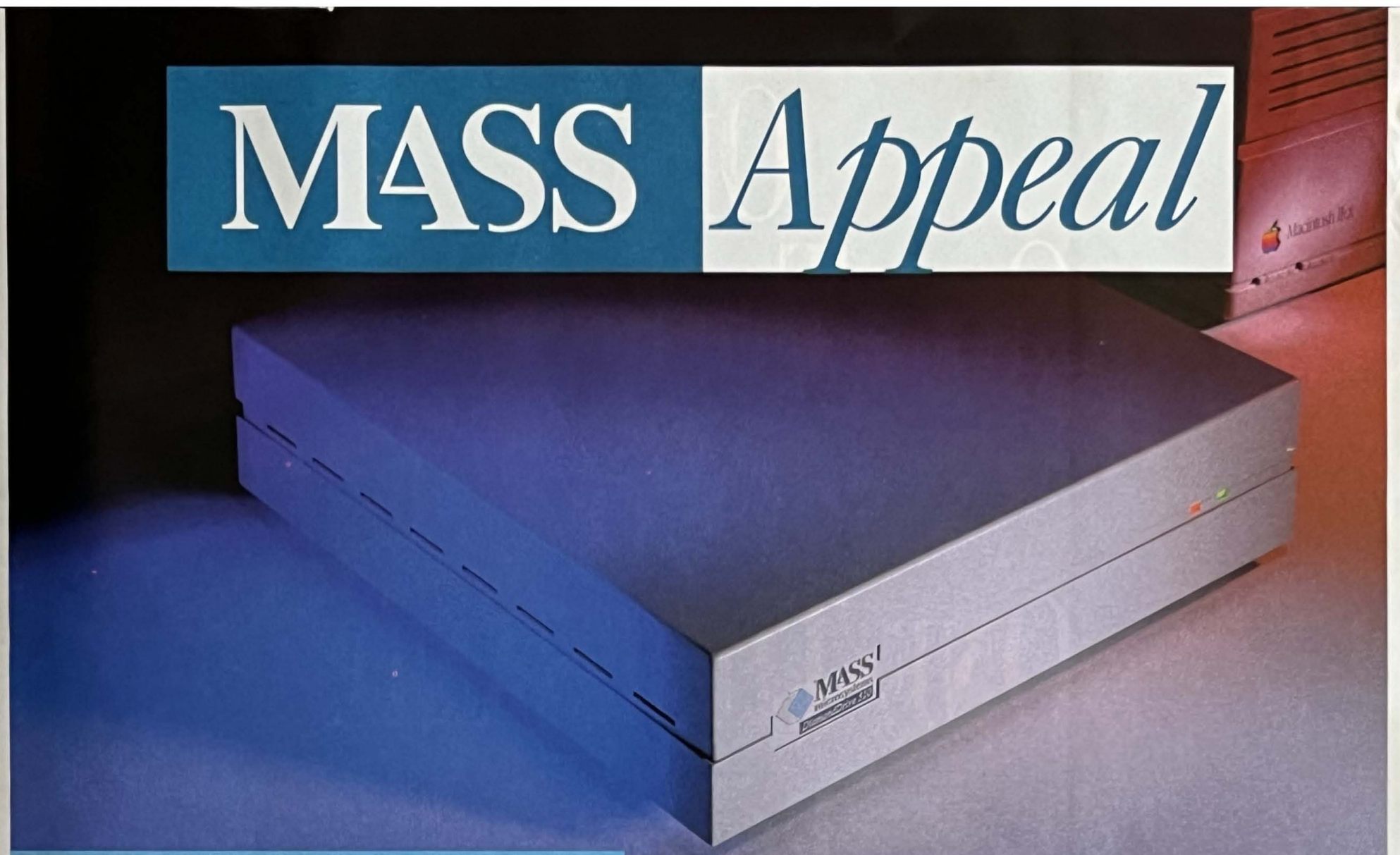

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One
One-Thousand,
Two
One-Thousand,
Three
One-Thousand,
Four
One-Thousand,
Five...

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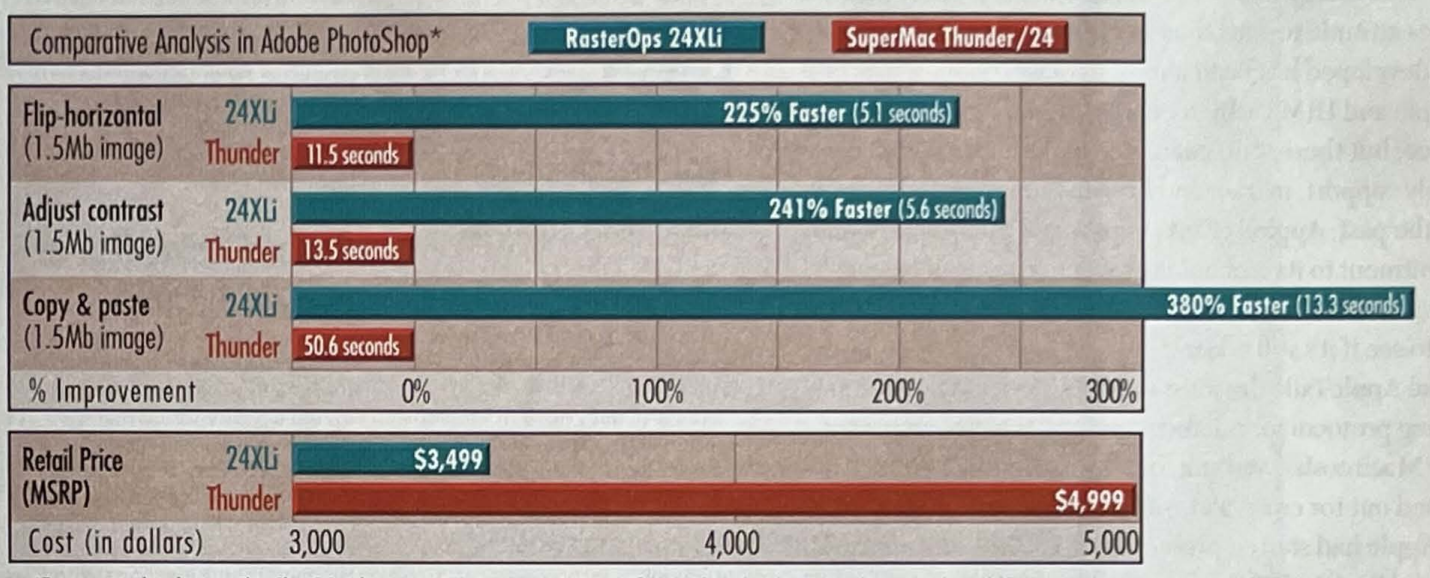

*Tests were conducted running PhotoShop 2.0 under system 6.05. Tests run on Macintosh IIfx under identical conditions. Complete test results available upon request.

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EDITORIAL

The importance of being open

Apple has built its $6 billion empire based on having innovative technology. But while Apple may have great technologies, its attitude toward those technologies after they have been developed has been almost cavalier.

Apple and IBM Corp. recently entered into a technology alliance, but there is no guarantee that the two companies will actively support, market and license their joint technology.

In the past, Apple's efforts to promote awareness of and commitment to its technology seem to consist of leaving it adrift in the middle of the ocean and then coming back a year later to see if it's still afloat.

Take AppleTalk, the most sophisticated and flexible networking protocol for microcomputers. It has been part of every Macintosh ever built, but it wasn't until 1990 that it was licensed out for cross-platform development.

If Apple had started promoting AppleTalk as a networking standard back in 1984, for example, most IS managers today would be able to set up and maintain their PC-based networks as easily as their Mac networks.

But Apple's lack of vision cost it, its customers and its competitors' customers access to that sophisticated technology. The company certainly made no more money because it withheld AppleTalk; if anything, its policy cost it some potentially sizable licensing revenue over six years.

Apple's most glaring missed opportunity is the Macintosh interface. The company created the first cohesive iconic operating environment, only to see Microsoft Corp., after two bungled attempts, come up with a still-imperfect copy that eclipsed Mac sales in its first year.

Now, as Apple enters a new phase in its existence, let's hope that the lessons of the past won't be lost. Creating standards and ensuring interoperability will do more to win customer respect than proprietary innovations that are merely short-term wins. Certainly the openness to sharing AppleTalk, Pink and perhaps QuickTime with the rest of the world bodes well.

But if the open-systems philosophy making the rounds in Cupertino turns out to be hot air, then Apple may find itself still without the broad market acceptance it craves. □

3 years ago in MacWEEK

Oct. 18, 1988: "With the introduction of the NeXT workstation, Steve Jobs has thrown down the gauntlet before Apple ..."

In retrospect: Sales are finally expanding, but the NeXT's struggle to gain critical market mass has been much more difficult than many planned.

Letters

Feature table didn't show all of Theorist

The comparative review of math applications (MacWEEK, Sept. 10) is much appreciated, but it misstated several points about Theorist.

In particular, some of the information in the table "Math packages features" on Page 48 deserves correction:

- Legendre functions are contained in the Spherical Harmonics notebook.
- Regarding matrix operation, the Reference manual states on Page 75: "The Adjoint op creates the transpose of a real matrix, the conjugate of a complex number, or the adjoint of a complex matrix (the transpose of the matrix and the conjugate of all elements)."
- On Page 73 the manual states: "The Power op always has two operands, the base and the exponent ... The base can be any scalar or matrix (or any other operator, for symbolic operations), or any sum of such expressions."
- On Page 74 the manual states: "The Absolute Value op returns the absolute value of scalar arguments, the length of vector arguments, and the determinant of matrices."

In my opinion, it would have been better to label the table "Built-in match packages features." Although Theorist does not have a built-in command to find eigenvalues, one of the Learning Manual examples does precisely this.

It is also easy to define functions for most of the other features that are shown in the tables, although in fairness to the review, it did mention that Theorist is generally extensible.

Charles C. Allen
West Lafayette, Ind.

Mac interface for 7.0 is really a click to use

In a recent column (MacWEEK, Aug. 6), Jean-Louis Gassée commented on some subtleties of the Macintosh interface. I believe the reason System 7.0 does not allow both menu selection of applications and click cycling is because Macintosh mice have but a single button.

It appears that the old usage of the Apple menu was non-standard because it required two menus for functions that should use a single one. However, once all MultiFinder functions are grouped under a single icon, the mouse button alone is insufficient for determining whether a mouse click on the icon was intended to evoke the quick click or the menu method of switching applications. Apple engineers choose the latter approach because it provides more information.

Marisano J. James
San Jose, Calif.

Borland leaves Mac users in the lurch

Users of Borland International Inc.'s Reflex database have probably already discovered that it doesn't work with System 7.0.

Borland has made a business decision not to continue developing or enhancing Mac products. This decision is certainly its prerogative, although I think it's shortsighted. In any event, this decision leaves the many Reflex users between the proverbial rock and a hard place since future Mac systems will mandate System 7.

As a small business, we've successfully used Reflex to automate many of our operations. Now we have to completely rewrite all of our applications in some other database environment, at major expense and inconvenience.

It seems to me that it would be in Borland's enlightened self-interest to license the Reflex source code to

GORDON STUDER

a third-party developer who could then provide a maintenance service. It could even earn royalties from such licensing.

But Borland seems to have no interest in this. The result is some *very* unhappy users who are unlikely to come within a mile of any Borland product in the future for fear of being cut off at the knees again.

Lyndon Holmes, president
Aries Systems Corp.
Andover, Mass.

Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105. MCI 323-1203; fax (415) 243-3650. Include your name, address and phone number. Letters should not exceed 300 words. We reserve the right to edit for clarity and length.

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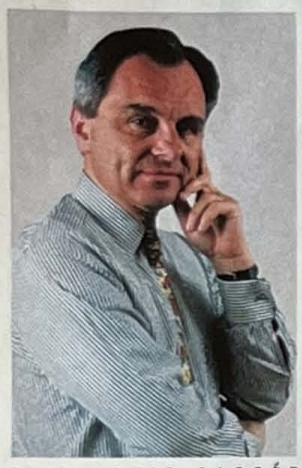


JEAN-LOUIS GASSÉE

The inclusion of scalable, device-independent Adobe Type 1 fonts in a future version of System 7 would seem to cover all user requirements. So, why have a second font standard?

Commentary

Font peace and other interoperability items

Start mentioning font wars in front of my mother and you'll get a shrug. The technoids are at it, again.

A few months ago, she did not understand why I was so excited as I was demonstrating a new System 7.0 feature, dropping fonts in the System file, rather than negotiating with the pernicious Font/DA Mover.

"Well," she said, "isn't that the way it's supposed to work?"

I didn't fare much better when I endeavored to explain TrueType or Apple's recent decision to integrate Adobe Type 1 font rasterizing technology into Macintosh system software.

Now, does this mean that TrueType is irrelevant? The inclusion of scalable, device-independent Adobe Type 1 fonts in a future version of System 7 would seem to cover all user requirements. So, why have a second font standard? Can't the many Type 1 suppliers cover all your needs?

TrueType and Type 1. The situation is not without its ironies. Some people point out that Type 1 specifications used to be proprietary. Then, these people say, competition, in the form of the public availability of TrueType specifications from Apple and Microsoft Corp., helped Adobe Systems Inc. come to the decision to make Type 1 an open format.

The other possible paradox is Microsoft's role: It might very well end up having the crucial role in developing a strong market for TrueType font vendors. As far as we know, Microsoft will ship Windows 3.1 sometime next year, and it will incorporate a TrueType rasterizer, thus creating a very large installed base of TrueType font "players."

TrueType will have an advantage that spans both the IBM PC and Macintosh environments: It will facilitate document interchange between Macintosh and Windows environments. But, like Type 1, the system is not foolproof. Fonts are externally referenced; that is, a font is called by some kind of name, but the document does not contain the font itself.

Thus, we rely on a screen or a printer rendering engine to take the name of the font as an argument, fetch the right font description algorithm from its own supply of such, and display or print as expected.

If the correct font description does not exist, the rendering operation is in trouble. Generally, the system attempts some kind of reconstruction or substitution to provide an approximation of the intended typeface and size on screen or paper.

Behind the gross missing font problem lurks a more subtle one: Fonts from different sources can go by the same name and create confusion in the system and in the user's mind. You would think that Times Roman is Times Roman, but no. It doesn't look the same, even to the untrained motherly eye, and it doesn't compute the same, to the point of disturbing the document layout as the accumulation of minuscule differences disturb line, paragraph or page breaks.

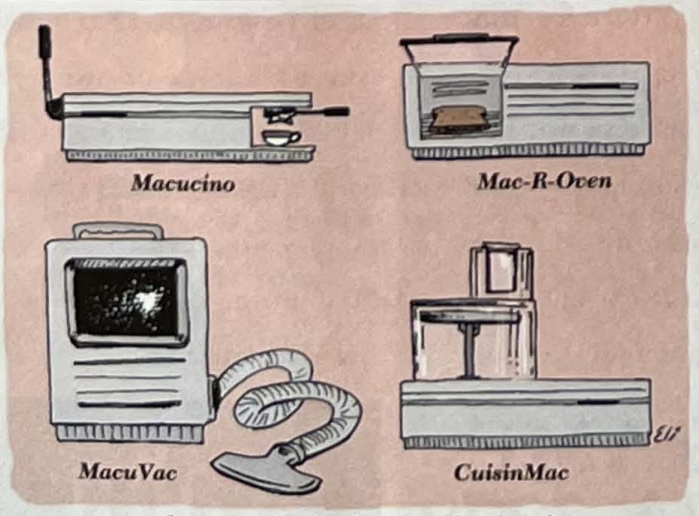
I guess annoying font-naming conflicts potentially remain. I hope a version of the aptly named Type Reunion (an Adobe program attempting to circumvent font-name conflicts) is part of the deal.

PostScript interchange. To help with document interchange, Adobe proposes to use PostScript as a medium. All Macs already are capable of translating a document into PostScript; that's what you do when you ship it to your LaserWriter as an ASCII file containing PostScript statements for the interpreter in the LaserWriter ROM. Since all platforms have the capability of doing the same, PostScript could be the proper vehicle.

However, applications would have to learn how to go back to their own data structures from PostScript. The other requirement is that all the Times Roman be really the same.

A lot of assumptions. Returning to my mother, another thing I didn't dare tell her is that you can't assume you'll take a Word for Windows document stored in Macintosh format on a 3.5-inch floppy, pop it into her Mac and open it, just like that. Certainly, Mac drives have been able to read the IBM format for a while, but I hesitate to use the word "interoperability" in front of her. □

MacTOON



Apple attempts to broaden its market share by introducing a suite of consumer Macs.

The Mac Manager

The truth of the Apple/IBM Alliance

Well, the news is finally out; Apple and IBM Corp. have released the details on their nuptials. And I predict it will tick off every pundit from here to Poughkeepsie. It seems that despite all the hand wringing about how IBM was about to take over Apple, the details reveal nothing of the sort.

It's time, then, to take a hard look at how the Apple/IBM alliance will affect Mac managers. Frankly, I see little, if any, benefit in the next one to four years. But the underpinnings of the alliance have the potential to change computing in the latter half of this decade.

Champions of interoperability. I polled quite a few Mac managers to find that most like the alliance. Hell, some are even ecstatic. The reason? Medium- and large-size Mac shops live in a world dominated by IBM mainframes and AS/400 minicomputers.

For years, these managers have wanted Macs to provide better and more innovative connectivity solutions. And they have needed real interoperability among their diverse computing platforms. While they have noted Apple's connectivity and compatibility mantra of the last year, they haven't seen *any* innovative products. As one manager put it, "A new version of a Mac 3270 emulation product is hardly groundbreaking."

Future belongs to Apple? The managers I spoke to now hope the alliance will "force Apple to think about the long-term focus of the company, instead of worrying so much about quarterly profits." Several managers expressed confidence that Apple would finally learn to break the "not invented here" syndrome that has long threatened to strangle the company's developmental efforts.

If you take a look at the kinds of technology the two companies will now share, there's good reason to think my manager acquaintances will get their wish. One example is multimedia.

For the first time since this overblown idea has danced its way onto the scene, we have some evidence that the technology could actually benefit Mac users and managers. The alliance will create a new company to deal with the joint issues of establishing technical standards (such as data formats, in which QuickTime provides a significant head start) and recruiting hardware and software vendors to follow these standards.

In short, the new Kaleida venture will try to unlock a wealth of useful and educational content that providers have been loathe to offer without a potentially lucrative platform.

Open systems, opportunities. Next, my manager friends and I took a long, hard look at the alliance's underlying philosophy — the commitment to open systems. The alliance promises something called PowerOpen, a new open-systems environment that mixes AIX, IBM's industry-standard version of Unix; A/UX, the Macintosh interface; and the PowerPC RISC (reduced instruction set computing)-chip architecture. The idea, at least, is that IBM PCs will be able to run Macintosh software, and Macs will run IBM software written for AIX.

DON CRABB

As I said, that's the idea. It's difficult to predict when PowerOpen will affect today's Macintosh shops. But I do believe we will benefit from its underlying philosophy. For the first time in its history, Apple is intimating it will license its OS to run on hardware it did not invent.

That's great news because it shows that Apple finally realizes the extent to which its customers live in a world of diverse computing options. Even if the PowerOpen environment falls flat, the philosophy defining it is a winner.

Rather than wailing about how Apple has given away its identity to IBM, many managers believe that the alliance is just the kick in the ass that Apple and IBM need. I'm looking forward to watching it all play out. □

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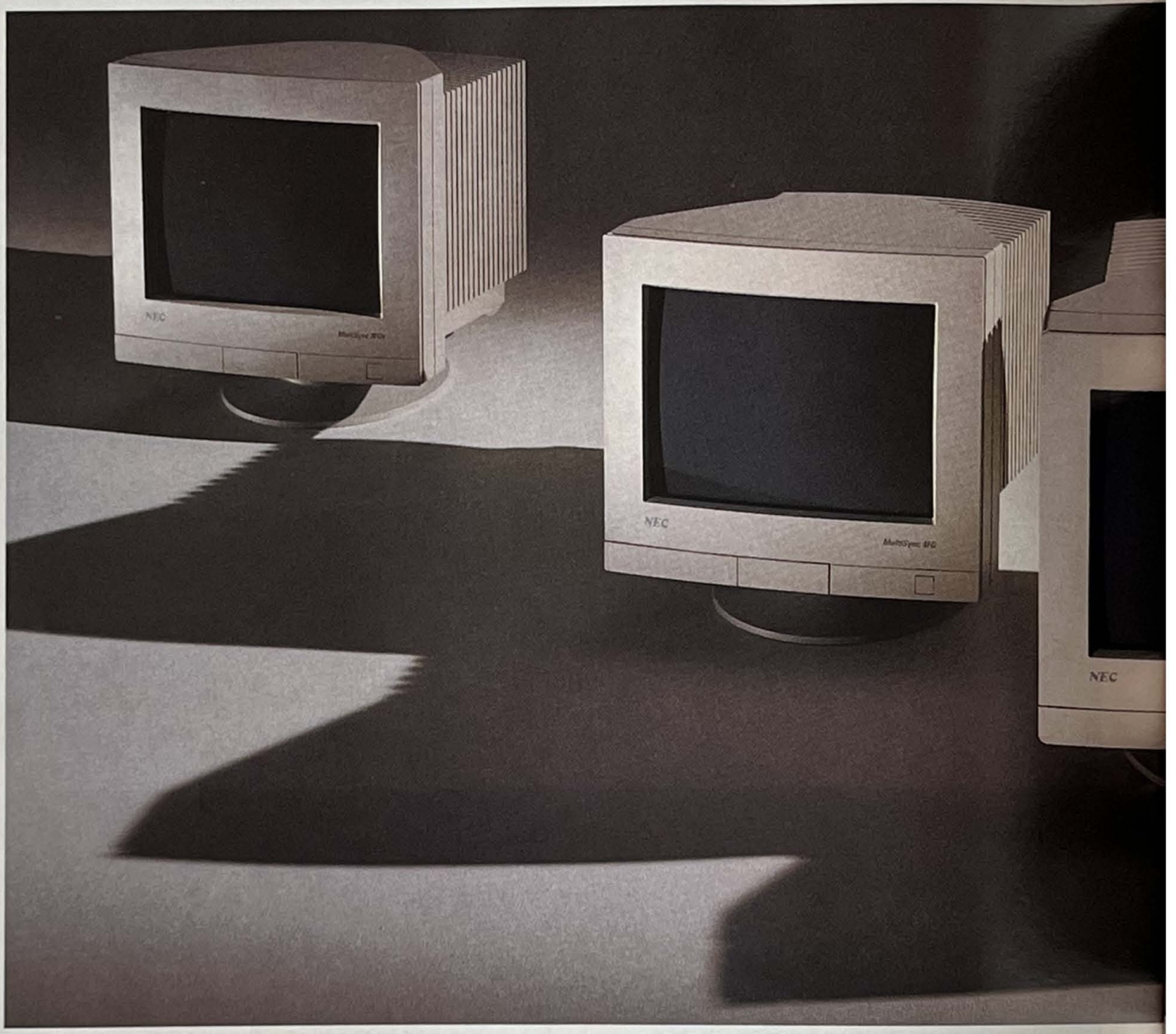

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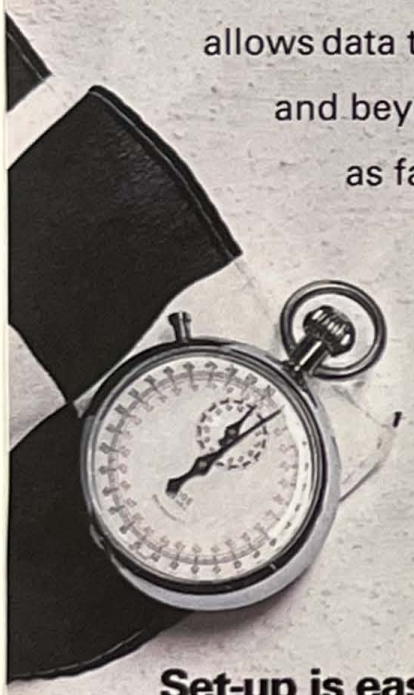

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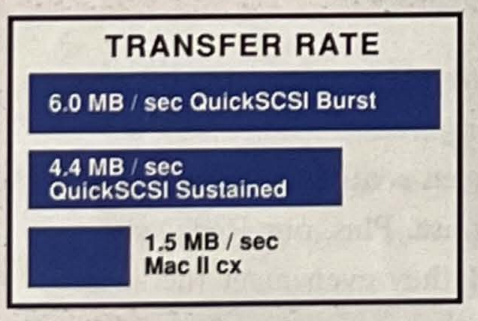

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Reviews

- Minitab Release 8. See Page 50.
- Comparison: Architrion, ArchiCAD. See Page 51.
- Spectra*Star. See Page 56.

ColorStudio 1.5 built for the pros

By Steve Hannaford

Version 1.5 of Letraset's ColorStudio consolidates the program's position as one of a handful of critical programs for graphic arts professionals using the Macintosh: ColorStudio, which now fully incorporates the valuable Shapes annex for importation and manipulation of Encapsulated PostScript files, is a deep and expert color retouching program. The new version offers a number of new features, but perhaps most important, it refines the user interface, which was Version 1.0's greatest weakness. The new version also extends the color-correction tools that have been ColorStudio's strongest asset.

CMYK editing. The major new feature of this release is the ability to edit CMYK (cyan, magenta, yellow, black) color files, such as photographic images that have already been corrected and separated on high-end scanning systems. Adobe Systems Inc.'s Photoshop, ColorStudio's archrival, barely beat the Letraset product to market with this feature (see story, next page). Nevertheless, the importance of this feature cannot be minimized as more and more publishing sites are finding that the best solution for productivity and quality is handling preseparated high-end scans. ColorStudio is excellent for dust cleanup and minor retouch work that might otherwise be done at a high-cost color retouching station.

The CMYK file on the disk is translated into RGB (red, green, blue) format for display on the monitor in real time. Despite this complex process, the program redraws reasonably quickly. A new CMYK palette has been added that displays only printable colors. A unique feature is a set of CMYK or RGB icons on the side of the editing window that make it easy to view individually each of the separation layers.

Smoother face. Some of the most annoying or puzzling areas in the ColorStudio 1.0 interface have been eliminated or upgraded. For example, the Open command has been simplified. The earlier version made the opening and importing of graphics a confusing business, but Version 1.5 allows you to open any supported file type from the standard Open dialog box. The Import and Export commands now have their own menu positions instead of being embedded in other choices. Furthermore, it is now possible to save TIFF and PICT files directly through the Save command, and a full set of options is available. EPS files, inexplicably, still need to be saved through a Save As Other menu selection.

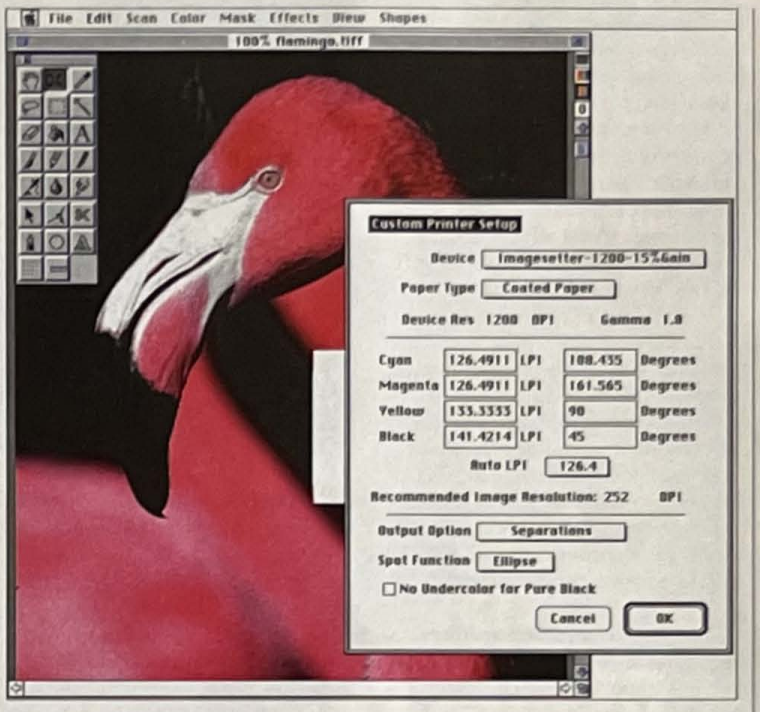
The new Eyedropper tool works as a color densitometer with controls to adjust its range of sensitivity. The Eraser tool allows you to paint in the current background color. Also, the Auto Selection tool is directly available from the tool palette.

While ColorStudio is still somewhat austere in its interface, there has been some attempt to bring major functions out of the sometimes hidden submenus and into more visible and readily found menus and icons.

Effects and filters. A number of new special effects have been added, some fanciful and some practical. The Unsharp Mask feature is an especially powerful tool that allows for the definition of a radius of interest and unsharp masking on any of the color planes. (It works on CMYK files as well.) Unsharp masking is a critical element in color correction, and ColorStudio offers a rich and flexible implementation of the effect (so rich, in fact, that it may take a lot of experimentation to discover all its effects.)

Among the new options are Motion Blur, Super Blur, Ripples and Sketcher. These commands are

See ColorStudio, next page



The Custom Printer Setup dialog box, like much of ColorStudio, belies its targeting of high-end color work. The improved, more accessible tool menu is in the upper left.

SCORE CARD
ColorStudio 1.5
MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price	$995

● Excellent ● Very good ● Good
◉ Average ○ Below average

ON BALANCE
ColorStudio 1.5
Letraset
MacWEEK

ColorStudio 1.5 is a creditable upgrade to a very good application for correction, manipulation and separation of color scans. Changes to the interface and expansion of strong color-correction tools make the program even better as a serious color retouching and production workhorse. The interface is still somewhat difficult, however, and the documentation is of little help. Even with the upgrade, this is no program for the casual user.

SYSTEM 7 COMPATIBILITY

ColorStudio 1.5	
Balloon help	Yes
TrueType	Yes
Publish and subscribe*	Yes
Apple events	Yes
32-bit addressing**	Yes

*Publish only
**According to vendor

NetWare for Mac helps make mixing merrier

By Vernon Keenan

In mixed computing environments, where Macs and IBM PCs and compatibles need to share data and networking resources, managers need a reliable, fast and maintainable file server to support multiple operating systems. Novell Inc. finally is shipping NetWare for Macintosh 3.0, the $895 to $1,195 add-on to NetWare 3.11 that provides the services and tools to build a state-of-the-art bridge between Macs and PCs.

NetWare 3.11 (previously known as NetWare 386) is more than just a file and print server; it's a 32-bit multi-tasking operating system that controls network servers based on Intel Corp.'s 386 or 486 processors. NetWare 3.11 costs $3,495 for 20 users or $6,995 for 100 users. (A $12,695 250-user version is also available.) NetWare for Macintosh 3.0 costs $895 or $1,195 for 20- or 100-user versions.

Although NetWare 3.11 has been around for a year, NetWare 2.2 or earlier was needed to serve Macintosh users. This lower-end NetWare lives on and offers a Mac connection through the NetWare for Macintosh 2.2 value-added process (VAP). The Version 2.2 software costs $895 for five users or $5,495 for 100, and includes the Macintosh VAP.

The view from the top. NetWare 3.11 takes over your PC server completely, replacing DOS. Through the use of NetWare loadable modules (NLMs), the latest NetWare can be extended with additional functions, such as a database server, special print servers and Network File System connections to Unix. Built-in disk mirroring with automatic switchover in case of failure and integrated backup provide enviable reliability.

NetWare uses its own networking protocol, IPX/SPX (Internetwork Packet Exchange/Sequenced Packet Exchange), a full-fledged protocol on the scale of AppleTalk or TCP/IP. PC-based network clients "talk" IPX/SPX when communicating with a NetWare server. NetWare for Macintosh 3.0 is a set of NLMs that add AppleTalk functions to the NetWare 3.11 server. Mac clients use their built-in AppleTalk services, such as AFP (AppleTalk Filing Protocol) and Printer Access Protocol, to communicate with NetWare servers.

NetWare runs the AppleTalk and IPX/SPX protocols concurrently through the same network-interface cards. Also, it permits PC, Unix and Macintosh users to access the same file-server volumes. The server automatically translates file-name conventions, so users can access files created by the other clients.

NetWare supports several convenient printer functions, including directly connecting DOS-compatible printers to the server's serial ports,

See NetWare, Page 48

SCORE CARD
NetWare for Macintosh 3.0
MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price**	$895*

● Excellent ● Very good ● Good
◉ Average ○ Below average

*For 20 users, $1,995 for 100 users.
**Requires NetWare 3.11, $3,495 to $6,995.

ON BALANCE
NetWare for Macintosh 3.0
Novell Inc.
MacWEEK

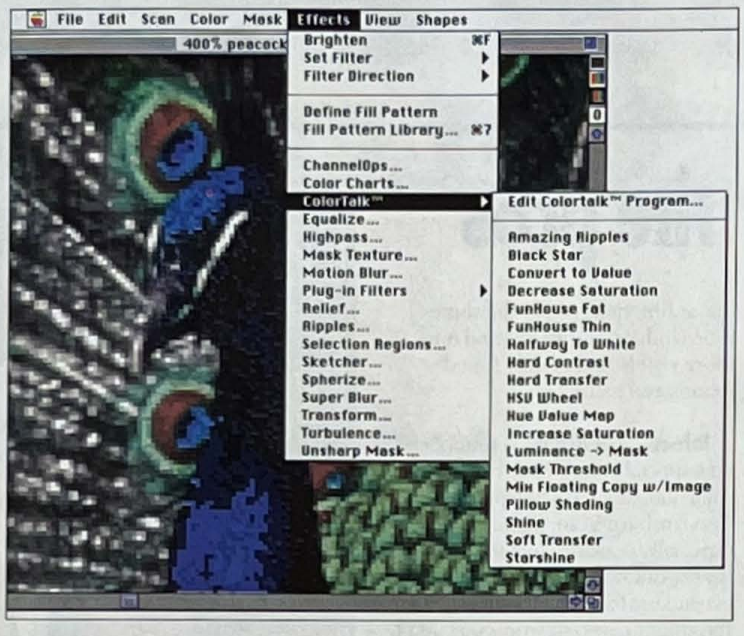
Add NetWare for Macintosh to NetWare 3.11 and you get a file server that can be shared almost seamlessly between Macs and IBM PCs and compatibles. Despite improvements over Version 2.2, the installation process is still long and complex, and the documentation could use some work. Only large, multiplatform, multiprotocol networks need to consider this level of server software, but those that do are assured a speedy and reliable server.

ColorStudio *From previous page*

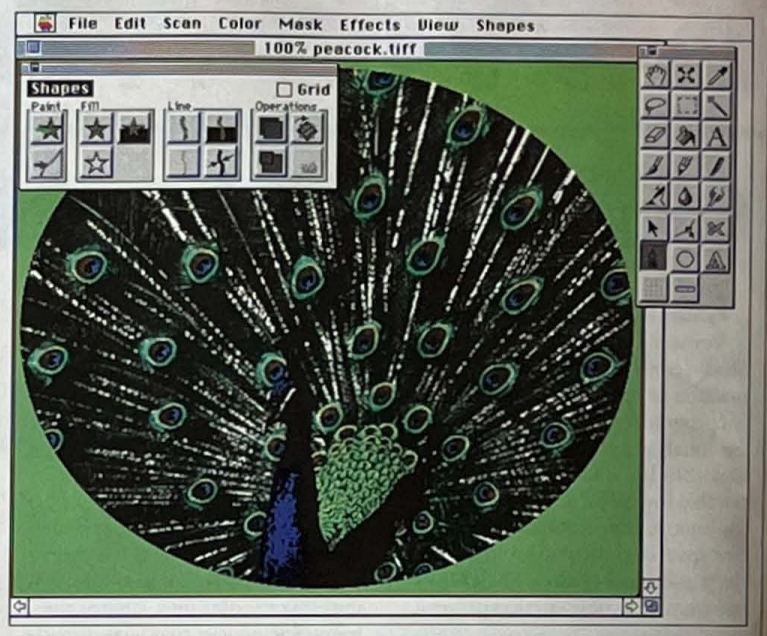
generally thoroughly implemented. For example, the Spherize command converts the selected image area into a sphere and allows you to set the Roll and Aspect parameters for the sphere, and place light sources and their intensity to give dimension to the shape.

The program now takes advantage of many of the growing number of third-party plug-ins that support Photoshop, especially effects and filters. However, not all functions are supported because of the incompatibilities between the programs.

Possibly the most intriguing new feature is the ColorTalk option. This powerful but simple programming language allows hacker-artists to program and save their own special effects out of predefined functions and variables. You can create, edit and experiment with these graphics-effect building blocks, though many users won't want to deal with this added complication.



The ColorTalk pop-up in the Effects menu features a variety of special effects developed by Fractal Software. You can edit these effects and save your own. ColorStudio supports many Photoshop plug-ins.



The well-integrated Shapes feature allows you to import EPS files or create your own Illustrator-type drawings. These files are "rasterized" and pasted into the image with a variety of options.

Correction and separation. As engaging as special effects are, they are less important than the more mundane nuts-and-bolts color correction and separation. ColorStudio's great strength has been its professional color tools, and those features are improved in the current version. Most of the complex details are dealt with in one powerful color-correction dialog box. As with many features in ColorStudio, this tool will take some serious studying, but the capabilities for color management are extensive, well-designed and extremely useful in the right hands.

The new version adds an advanced CMYK correction module that corresponds well to the kind of post-proof suggestions likely to come from printers and pre-press professionals. This new table allows the operator to handle with ease such typical demands as "Take the cyan up 5 percent in the quartertones."

Documentation. Letraset chose to document the new features of the program by adding a supplementary manual. For experienced ColorStudio users, this format will be a help in readily grasping all the new features. But novice users should expect to spend hours flipping between the main manual, the 1.5 supplement and the Shapes manual.

The manuals, as a whole, are reasonably clear and cogent. However, they are inadequate for this highly complex program, especially in the critical and extremely complex area of masking, an area where this program excels. Expert ColorStudio users can do wonders with the masking controls, but the manual barely hints at these capabilities.

On the other hand, while most application Help files are more annoying than helpful, ColorStudio has some of the most useful help available.

Conclusions. While the program is somewhat easier to use, it is still forbidding to novices and cannot be mistaken for a fun paint program. To a great extent, you are on your own in terms of figuring out how it all works and putting the pieces together.

As the version number indicates, this ColorStudio upgrade is somewhere between a major update and a cosmetic release. There are a lot of fine new features but few radical changes in the basic program. While a few frills have been added, the program essentially just does a little better what it did quite well in earlier versions: allow users to retouch, correct and separate color scans.

Letraset is at 40 Eisenhower Drive, Paramus, N.J. 07653. Phone (201) 845-6100 or (800) 343-8973; fax (201) 845-5351. □

Photoshop, ColorStudio are moving closer

It is difficult to review ColorStudio without mentioning Adobe Systems Inc.'s Photoshop. Both products were originally released around the same time, performed many of the same functions and were major software breakthroughs. ColorStudio, however, was crippled by poor marketing and a pricing scheme that placed it at twice the cost of Photoshop. It has been further hurt by a weakening follow-up as Letraset has allowed its sales efforts to dwindle. Photoshop, on the other hand, has been expertly handled and has become an industry standard.

Photoshop has some readily apparent advantages. It is easily approachable, with a wonderful user interface. It is not hard to get deeply into the program without consulting the excellent manuals, and beginners can effortlessly create intriguing special effects. ColorStudio, on the other hand, is much tougher to approach. It takes work and some study to get the program to start performing its magic. And many of the best features of ColorStudio are only apparent at the press.

With recent upgrades of both products (see MacWEEK, July 16), the two products have stepped closer to each other. Photoshop 2.0's color science and the quality of its separations are much improved. ColorStudio's interface is less quirky than it once was, and it now feels a little more like Photoshop. Adobe's program has added a limited version of Shapes annex and can rasterize Adobe Illustrator files. ColorStudio accepts Adobe plug-ins and has filter effects that approach Adobe's. Both allow for CMYK editing.

As far as speed is concerned, the results are mixed. ColorStudio seems somewhat faster in many normal tasks on a typical Mac configuration, but Photoshop can make better use of expanded memory and can really fly if you own stockpiles of RAM.

ColorStudio still looks like a superior pre-press application, narrowly. Photoshop wins the honors as an all-around graphics program. Both development teams listen to their customers and neither is too shy about copying the better features of the other. Most serious retouching artists will want to learn both, and some sites even swap images from one program to the other for last-minute touch-ups.
— By Steve Hannaford

SCORE CARD
Photoshop 2.0*
MacWEEK

Overall value	●
Performance	●
Features	●
Ease of use	●
Documentation/support	●
List price	$895

● Excellent ● Very good ● Good
◉ Average ○ Below average

*Reviewed July 16.

IN BRIEF

THINK Reference

Cross-referenced database for Mac programmers

Symantec Corp.'s THINK Reference attempts to ease the burden on Mac programmers by providing a cross-referenced database to the mountain of reference material programmers must wade through.

The $99 database includes information from the first five volumes of Apple's programming documentation, "Inside Macintosh," which is published by Addison-Wesley Publishing Co. It also contains changes found in Apple's Macintosh Technical Notes, which are published when revisions are necessary.

THINK Reference is an application intended for use while programming; it runs under System 6's MultiFinder or System 7.0's Finder. In that respect it performs extremely well, demanding a mere 256 Kbytes of RAM to run. A nice Iconize feature reduces the THINK Reference window to a small rectangle while not in use, providing a quick return to the application when needed.

Cross-referencing is provided through hypertext-style links, which allow the user to jump to related pages by clicking on boldfaced or underlined words.

The capability to jump between related topics in a non-linear fashion is the key to the product's usefulness. The hyperlinks are also fast. Even on 68000 Macs, there is almost no perceptible delay unless the program's animation effects, such as zooms and wipes, are enabled.

Although THINK Reference covers most topics extremely well, it doesn't cover everything. Areas not covered include advanced managers such as the AppleTalk Manager, the Slot Manager and Sound Manager.

Also, some users have complained because the program does not address material in "Inside Macintosh, Volume VI," which documents System 7.0. Although Symantec does not comment on unreleased products, it has said inclusion of the volume would be a natural progression for the product.

In contrast to most of Apple's documentation, THINK Reference provides its examples in C rather than Pascal. A description of how to convert the C examples into Pascal is provided, but it may not be sufficient for beginners. Although the manual states the product is for all levels of programmers, in the future we'd like to see a separate Pascal version with more in-depth explanations.

Additionally, although it points out when a Technical Note has superseded "Inside Macintosh," having the text of the original Technical Note would be useful. Because that would add considerable size to the database, it could be included as an optional file.

Overall, THINK Reference provides programmers with fast access to huge amounts of reference material with easy links to related subjects.

Symantec Corp. is at 10201 Torre Ave., Cupertino, Calif. 95014. Phone (408) 253-9600; fax (408) 252-4694. *— By Wade Williams*

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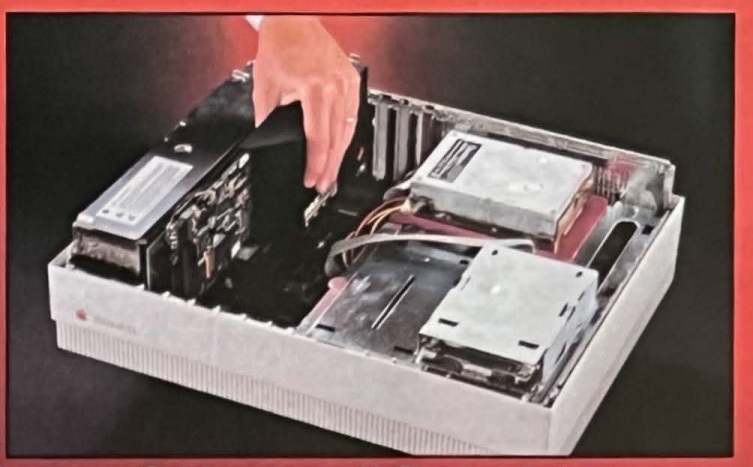
The Mac II hard drive on a card



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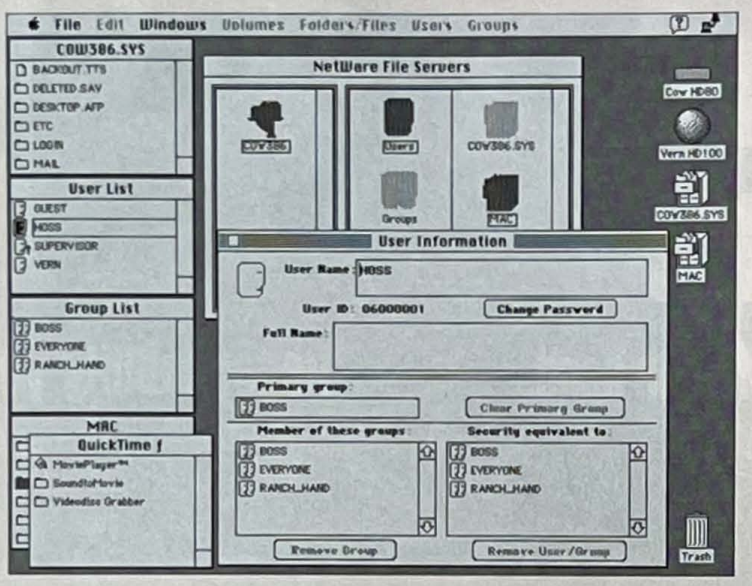
NetWare

From Page 45

spooling Macintosh print files destined for LocalTalk-connected laser printers and sending PostScript files from DOS applications to AppleTalk printers.

NetWare for Macintosh also performs AppleTalk, IPX/SPX and TCP/IP routing. You can install multiple Ethernet, token-ring, ARCnet and LocalTalk cards in the server and have NetWare move packets between these networks. It even can handle AppleTalk Phase 1-to-Phase 2 transition bridging and network-to-network tunneling.

While you can perform some of these functions on an AppleShare server, they impair performance and aren't certified to work together.



The Mac portion of Novell's NetWare for Macintosh administrative software can be run over the network to create user accounts and groups, and change access privileges.

Getting there. NetWare 3.11, while easier to install than previous versions, comes with enough manuals and disks to make network managers wonder what they've gotten themselves into.

For our simple test system we used a 386-based PC running at 25 MHz with 16 Mbytes of RAM, a 650-Mbyte Seagate Wren VII hard disk, an UltraStor enhanced small device interface (ESDI) disk controller (on an Industry Standard Adapter bus) and a Western Digital EtherPlus network-interface card. For client computers we used an IBM PC AT-compatible with another EtherPlus card, a Mac IIci connected via Ethernet, and a Mac SE and Portable on LocalTalk.

NetWare installation is not intended for the novice manager, and Novell prefers that users contract with trained Novell value-added resellers to configure and install new networks. Even before the software is installed, you must accommodate NetWare's special requirements for bus type, hard disks and network adapters in your server purchase. VARs often market NetWare-ready systems that are preconfigured to Novell's specifications.

We had to perform several special configuration procedures, including accessing the low-level formatting routines in the disk controller and loading an Ethernet driver that was specific to the Western Digital card. We used the formatting functions built into our hard disk controller card to repeatedly test each disk sector and record the bad sectors into a NetWare-compatible table. The formatting process takes time, depending on the size of the hard disk.

Setting up the client. Installing client software on a DOS workstation takes about 15 minutes. Mac client-software installation is simple because the standard AppleShare workstation software is used. A few NetWare-specific utilities need to be copied to each client's hard disk.

After the basic server and DOS workstation installations are complete, the Install program is used to load the NetWare for Macintosh NLMs. You don't need to take the server down to install AppleTalk services, and AppleTalk services can be turned off and back on without affecting other server activities. Several commands must be added manually to the server's start-up files. The AppleTalk network numbers and zone names are specified there.

Although the thousands of pages of NetWare documentation are well-organized, including several quick-reference cards, we were often confused during the installation process. More information is needed on how to fix certain error conditions. The quality of technical editing and illustration definitely is not at the level typical for Mac products. However, the NetWare for Macintosh manuals hold a lot of information on AppleTalk network design, which should be helpful for system managers who are new to AppleTalk.

On the road with NetWare. Although we didn't run NetWare 3.11 in a large production environment, we were impressed with its performance, which is one of the main improvements over Version 2.2. We bombarded the server from three client Macs and found its responsiveness comparable to AppleShare 2.01 on a Mac IIci.

On the client side, using NetWare for Macintosh is almost as easy as AppleShare. Most users will need to know only how to open the Chooser, select the server and mount selected volumes. Aliases can be used under System 7.0 to make server access even cleaner.

NetWare doesn't translate text files automatically between DOS and Macintosh. Users will have to employ a file-translation utility, such as Apple File Exchange, to get a DOS text file into a Mac word processor properly.

We didn't have any problems using NetWare under System 6.0.7. Under System 7.0, however, we found that when the file server was mounted, small icons became distorted. We could still access our files, and the problem went away after the volume was dismounted and the Mac was restarted. Novell is aware of this bug and is generating a patch for the server software. Several small patches like this one are being combined in NetWare for Macintosh 3.01, due to be released soon (see MacWEEK, Oct. 1).

Because NetWare has a more elaborate security scheme than AppleShare, not all of its volume,

See NetWare, Page 53

Net administrators plug for NetWare

Administrators have high praise for Novell's NetWare for Macintosh 3.0, a set of NetWare loadable modules (NLMs) for the company's NetWare 3.11. According to managers of large networks with a mix of Macs, MS-DOS, OS/2 and Microsoft Windows machines, Novell's latest offering provides an unrivaled blend of speed, transparent operation and ease of use. "I love it," said Gary Conner, vice president for technical services at Direct Line Technologies Inc. of Modesto, Calif. "In day-to-day performance, it runs 1.3 to 1.4 times faster than AppleShare [in general] and 400 percent to 500 percent faster than AppleShare in database performance.

"We've moved everything off AppleShare except a couple of applications that don't run with Novell," Conner said. Specifically, Direct Line ran into compatibility problems running NetWare with MultiLedger, an accounting package from CheckMark Software Inc. of Fort Collins, Colo. "The one reason we're running an AppleShare server is to do our accounting," Conner said.

According to Chris Silva, technical analyst with a Midwestern telecommunications company, NetWare for Mac's fault tolerance and NetWare's support for Novell add-ons offer further advantages over AppleShare. "Even for organizations that currently are mostly Mac, [NetWare for Mac] gives access to powerful hardware," Silva said. "It beats any other solution for fault tolerance and stability, and it's fun to talk to a non-Mac company that understands the Mac so well. It makes you feel a little more comfortable when you're rolling it into a large network than current AppleShare emulators do."

Administrators also said they were impressed with the new NLM-based version of the program compared with the value-added process (VAP) of earlier NetWare versions. "The NLM has been a tremendous improvement both for the user and the LAN administrator," said Dave Stott, LAN manager with US West Communications Inc. of Phoenix. "It's much faster to use at the desktop and much easier to configure and administer than the old VAPs were; it provides greater file sharing, larger file sizes and greater expandability for the network," Stott said.

According to Direct Line's Conner, NetWare for Mac 3.0 is "completely transparent to users. Running off of Ethernet, it's often as fast running off the server as off a local disk."

Administrators reported few compatibility problems running the software with System 7.0, although Stott reported a glitch that arose with the latest version of Notify, a system extension that allows users and the administrator to send and receive messages around the network. "After installing Notify, the Mac was about as useful as a boat anchor," he said. On the advice of Apple technical support, Stott solved the conflict by switching back to the previous version of Notify. (According to Novell, a new version of the extension, available on CompuServe, fixes these compatibility problems.) Other administrators noted a few shortcomings of NetWare for Mac. "It would be nice to run an all-Mac network with a dedicated server," Conner said, "but [NetWare] can't currently do all Novell's administration off the Mac."

— By Matthew Rothenberg

Uniting Macs and a Unix network

For network administrators integrating Macs into a Unix network, adding support for AppleTalk and AppleShare protocols to the Unix operating system has appeal because the client interface is simple and consistent. Locus Computing Corp. provides just such a connection through a set of software add-ons to the Santa Cruz Operation's (SCO) Open Desktop Unix running on Intel 386 CPUs.

Locus' PC-Interface for Macintosh comes in two parts: an AppleShare-compatible file server that runs on the SCO computer and a TCP/IP terminal emulator, PCIterm, that runs on client Macs. The software costs $360 per user. Besides the server software, Locus also offers a $500 PrintServices, a print spooler that allows Mac users to spool PostScript files to laser printers on AppleTalk and gives Unix users access to the same printers.

All of the AppleTalk products and PCIterm were developed by Pacer Software Inc. of La Jolla, Calif. Locus has repackaged the Pacer products with brief, simple documentation and provides specialized support for the SCO environment.

Besides the Pacer products, Locus also has developed DOS and Windows 3 networking products that connect to SCO hosts, allowing files from DOS, Unix and PCs to reside on one file system. Although not as full-featured as PacerTerm, PCIterm serves as a basic terminal emulator that connects users to any host computer that uses TCP/IP. PCIterm uses the Macintosh Communications Toolbox for connection and terminal services, and it comes with the latest version of Apple's MacTCP.

Like all of the AppleShare file servers that run on non-Macintosh hardware, PC-Interface is easy to use on the client side. Since the Unix file and directory protection scheme is nearly identical to the AppleShare security methods, users can use the Sharing menu option in Finder 7.0 to set all file and folder permissions. PC-Interface automatically converts text files between the Unix, DOS and Macintosh file formats, helping to make the integration of text documents easier.

We tested the PC-Interface setup using the same hardware configuration that was used for NetWare for Macintosh 3.0. The installation process is similar to NetWare: long and tedious. Like NetWare, most of our time was spent formatting the hard disk for the Unix operating system and loading the Open Desktop software. SCO's documentation is much briefer, and oddly, more comprehensive than Novell's. All installation options and potential problems were thoroughly covered. We had a chance to use SCO's technical support and were impressed with its professionalism and responsiveness.

The installation of the PC-Interface software requires an Open Desktop utility, which uses a pseudo-graphical user interface. You administrate PC-Interface server volumes through the native Unix tools for creating directories and setting security options.

Unfortunately, administration of the AppleShare-specific features of the PC-Interface server requires this rather arcane command-line interface. We really missed a Macintosh-based server-administration tool, and we wish Locus used an interface similar to the other Open Desktop utilities for this chore.

In informal tests, we found PC-Interface ran at about 70 percent the speed of NetWare on the same hardware. Locus said this was because of the overhead of Unix. PC-Interface had the same small-icon distortion problem as NetWare.

We also found a serious problem when using a client Mac running System 7.0: When we copied a folder full of text files to the server, PC-Interface appended garbage to the end of each file. Locus technical support quickly found the problem and has already prepared a fix.

You will find the PC-Interface products useful only if you already have an SCO Open Desktop system and need to connect Macs, PCs and Unix workstations into a common file system. If you fit this profile, PC-Interface can be a useful addition to your armamentarium of Unix networking products.

Locus Computing Corp. is at 9800 La Cienega Blvd., Inglewood, Calif. 90301. Phone (213) 670-6500; fax (213) 670-2980. — By Vernon Keenan

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Minitab still an unfriendly face

Minitab for the Mac suffers from the requirement that it use the same dated command-line syntax as its mainframe siblings.

By Becky Waring

Minitab, first released in 1972, is one of the most venerable and widely used statistics programs in the world. Especially popular with educational institutions because of its relatively simple command structure, Minitab has been continually updated to run on new platforms and with new statistical capabilities.

However, while Minitab Inc.'s efforts over a 20-year time span have resulted in a reliable and statistically full-featured program, Minitab for the Macintosh suffers from the requirement that it use the same dated command-line syntax as its mainframe siblings. The latest version, Release 8, is touted by the company for its more Mac-like menus and dialogs and the addition of a spreadsheet-style data editor, but examination reveals that the program still falls short of the user-interface standard Macintosh users expect.

The Minitab windows. Minitab Release 6 for the Mac (see MacWEEK, June 5, 1990) essentially replicated the dumb terminal or line-printer interface used in the mainframe world and placed it in a Mac window. Release 8 is a major step forward, with all major functions now accessible from menus and dialogs. While the main Session window still shows the familiar "MTB>" prompt as it waits for your instructions, you can now use the menus to choose commands, and dialog boxes are used to fill in parameter and subcommand data. Minitab's use of menus eliminates many — but not all — of the annoying syntactical error messages, as well as the need to memorize command names.

The Session window records all commands issued, data input and analysis results (except for high-resolution graphs, which are plotted in their own windows). An output file can be created that automatically records the Session window to disk, otherwise half of its contents are discarded without warning when it fills available memory.

Other Minitab windows include the data worksheet, the Info window and the History window. The Info window gives a handy listing of all columns in your worksheet and their names, the number of rows and missing values. It's especially useful for remembering column names when typing in commands. The History window records commands and input, but not output, and is useful for keeping a more compact audit trail than the Session window and for developing macros, although Minitab also has a macro recording feature. The History window also can be saved to disk.

The data worksheet looks like a spreadsheet and contains a maximum of 1,000 columns; rows are limited by available memory. With the worksheet is a new Editor menu, but the worksheet offers few of the typical Macintosh spreadsheet functions. You can't select, copy or paste more than one cell at a time, nor can you insert columns between others. To copy the contents of a column and paste them into another requires that you use the Session window's Copy command, and since you can open only one worksheet at a time, you can't copy and paste from one worksheet to another. The manual recommends merging data from two worksheets by first exporting, then importing, in tab-delimited format.

The Editor menu contains such functions as inserting and deleting rows and cells. We found we had to use the Delete Cell and Insert Cell command to reset some cells to empty, since the Mac keyboard's Delete key places a missing-value symbol in the cell, which can ruin analyses if it has not been intentionally added.

Despite the limitations of the data editor, which seems linked to the limitations of the underlying Minitab commands, importing and exporting basic text data files is simple. If you have non-delimited data or more-complex files, Fortran-like Format commands can be used to parse it. There are no menu or dialog equivalents for these commands, however, and they require very precise syntax.

While there are many windows to contend with in Minitab, there is a handy Window menu, and you can save your arrangement with the Preferences command. The many windows also translate to multiple files to save, which can be confusing, but Minitab assigns DOS-like file-name extensions so you can figure out which is which.

A handy shareware text processor desk accessory written by David Dunham, called miniWRITER, is included with the package.

Generally, the more-complex functions of the full Minitab command set cannot be generated from the menus (two pages in the manual are devoted to listing these exceptions), so power users will have to learn the commands and syntax despite the new menu structure. Even the dialog boxes are somewhat obscure unless you are familiar with the command set.

Statistics. Despite these user-interface limitations, Minitab retains a strong set of statistical functions. New features include process control charts, a general linear model (GLM) command for unbalanced ANOVA (analysis of variance) and design of experiments. Furthermore, the Let command can now take Boolean operators, making it much easier to manipulate subset data.

Data-manipulation capabilities in general are very good, although there is no convenient way to aggregate time-series data. You can create patterned variables and general expressions easily in new columns in the worksheet, and you can code data values.

Existing functions include basic descriptive statistics, nonparametric methods, regression, multivariate and time-series analysis, exploratory data analysis, and cross tabulations. Double-precision arithmetic is used, and Minitab's heritage brings with it excellent statistical algorithms. Calculation speed is very fast, making waits negligible for most purposes on our Mac IIx.

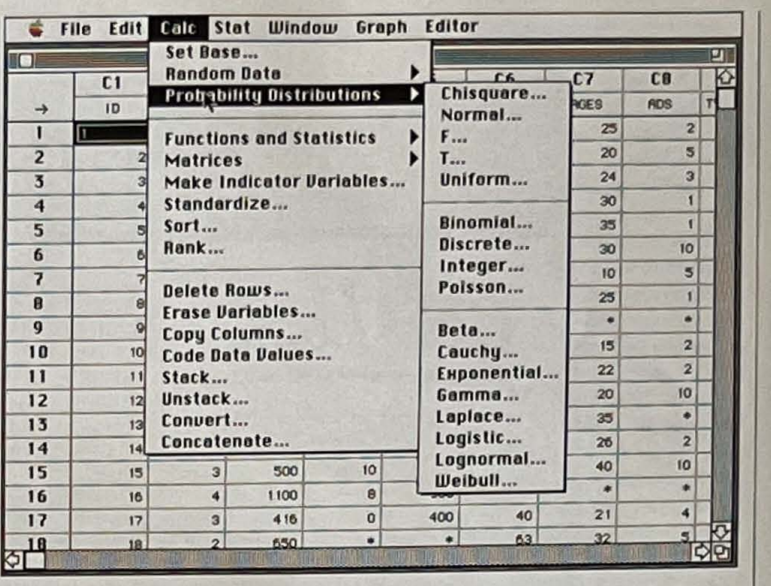
Results of analyses are shown in the Session window, where they can be viewed and saved to disk for later printing. You can't print the Session window directly, another small annoyance. Results are formatted exactly as they would be for a mainframe line printer, and they even scroll by on your screen as if they are being printed line by line. One major drawback is that you can't copy and paste more than one value at a time from the Session window to the data worksheet.

Graphical results come in either low- or high-resolution form. Low-resolution graphs are simply line-printer-type plots using asterisks and other assorted punctuation marks. The high-resolution graphs are plotted in PICT format in separate windows (up to 15 may be open at a time, after which older plots are discarded without warning). These PICT graphs can be printed or saved to disk. Only a few of Minitab's graph types can be shown in high-resolution format, however, mainly the scatter and line plots. These also are the only plot types for which you can choose colors (and colors must be assigned by number in a manner similar to using pen plotters).

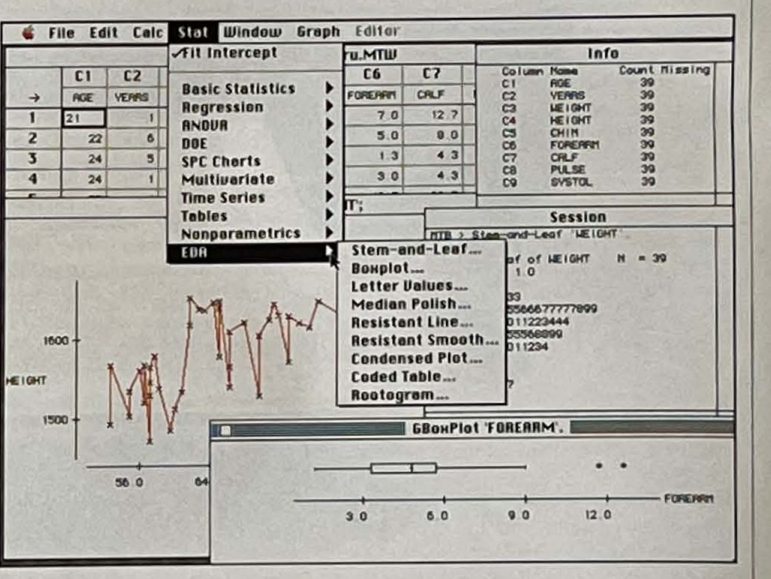
For any type of presentation-quality output of either graphs or analyses, you'll have to export your results and reformat them in another package.

Documentation. Minitab comes with an excellent reference manual and tutorial, as well as a student handbook that teaches the elements of statistics. On-line, context-sensitive help is very good. Error messages, while disturbingly frequent, are specific and helpful.

See Minitab, Page 53



Minitab Release 8's main enhancement is in its interface, which now places many of the program's commands on Mac-like menus and dialogs, making it easier to use. This is a change from its 20-year mainframe-based heritage of command-line entries.



This set of Minitab windows includes a high-resolution scatter plot (shown in red) and a box plot (at bottom). The Session window shows a stem-and-leaf diagram, chosen from the EDA submenu.

SCORE CARD

Minitab Release 8

MacWEEK

Overall value	◉
Performance	◉
Features	◉
Ease of use	⊙
Documentation/support	◉
List price	$695*

● Excellent ◉ Very good ◉ Good
⊙ Average ○ Below average

*Upgrades $200.

ON BALANCE

Minitab Release 8
Minitab Inc.

MacWEEK

This upgrade of the venerable mainframe-based package adds a number of new features, including an Edit menu and a spreadsheet-style data worksheet, and access to commands from menus and dialogs (though command-line access is still there as well). Despite Minitab's excellent statistical and data-manipulation capabilities, it is still handicapped by its reliance on an antiquated command structure that takes little advantage of the Mac interface.

COMPARISON

ArchiCAD, Architrion build on 3-D block

Interfaces simple, yet allow complexity

By Timothy E. Johnson

Integrated CAD systems, such as UNIC Inc.'s Architrion II-Series 5.5 and Graphisoft's ArchiCAD 4.0, handle everything from 3-D modeling and visualization to the attendant 2-D working drawings, while simultaneously tracking specifications and cost estimates. Either of these programs makes it possible for intrepid designers to place their entire operations on a Macintosh.

First-time users will find the 3-D interfaces refreshingly simple yet rich enough to work with complex, enclosed spaces. But first, they must adjust to the block metaphor these programs use to represent buildings.

A shared design. Both of these programs have as their basic design element a 3-D block. You can stack blocks to represent simplified buildings and, for finished work, you can draw blocks to represent slabs and then use tools to create and attach other building components, such as doors, which are really just more blocks. You can easily cut, punch, section, reproportion, rotate and skew these blocks, or link several together to form curved walls. Both programs correctly display the edges formed by sections, intersecting blocks and holes.

Both applications require a Mac II with an FPU (floating-point unit), System 6.0 or higher and at least 2 Mbytes of free memory. Both are copy-protected with annoying hardware keys.

Both programs demand that you draw your project in the plan view, where you supply the third dimension on the keyboard. Where they differ is how they give you an out from this constraining notion of design.

More flexibility. Architrion II (the program's creator, Gimeor Inc., was recently absorbed by UNIC) gives you the most flexibility in the third dimension because you also can draw in any vertical section. The program provides tools for aligning blocks by either making them adjacent or by stretching and skewing a block to meet the face of another block. The latter operation is particularly useful for making roofs with gable ends. But you can't skew every face — all blocks in Architrion must have vertical sides. This means, for example, that a sloped roof will always have a vertical edge at the eave. Also, blocks can have only six sides in 3-D, so you must build up a collection of adjacent blocks to represent a roof plane that covers many-sided rooms.

The program comes with a collection of door and window details called a frame library. Each entry is a collection of plan, section and elevation drawings for installation in 3-D openings. You can optionally use objects located in the 3-D library if you want to see true projections. You can expand these libraries with additional files the company distributes free.

Architrion throws shadows in a shaded interior using a single light source that you can position. This light mimics either the sun, a point source or a spotlight. All surfaces have a matte finish, although you can control how the edges and frames appear.

The program makes better use of the Macintosh interface since we last reviewed it two years ago. Parameters no longer are displayed in the pull-down menus but in comprehensible dialog boxes, and more operations appear in the toolbox than in menus.

The 3-D module has several new features: The dialog box for creating complex selection criteria lets you choose objects either by type, color, location on the screen, base location or height, in any combination. The Movie dialog lets you view the play of shadows over your building for one day or an entire year. You can sandwich any number of materials in a wall for later use in the Bill-of-Materials spreadsheet generator, and there are even tools to compute both the net and gross areas (or volumes) in your project.

The most welcome improvements, however, are in the 2-D module, where you annotate projections imported from the 3-D module. You now can perform all the operations on circles and arcs that were previously available only for lines, such as extends and clips. The new Tangency tool can strike fillets between arcs and circles, not just between lines. The program has more arrowhead and snap choices, and it provides auto-associative linear and radial dimensioning. More importantly, the 2-D redraw speed is now the fastest among CAD programs (3-D redraws are fast, too). This speed, however, extracts a price: Architrion II uses fixed-point arithmetic, which means the program is only accurate to 1 in 32,768 units, or 1 inch out of 2,728 feet.

Other limitations. The 2-D module can import and export 2-D DXF (Drawing Interchange Format) and PICT files, so it is possible to import third-party window and door catalogs. Surprisingly, you cannot import or export 3-D files; the only way you can communicate with the outside world is through the 2-D module.

The program has some other curious deficiencies that undermine its strengths: There are only eight layers in the 3-D module, and the color palette limits you to 256 fixed colors. This is fine if you make only line drawings but inadequate for shaded renderings. There is no macro language for automating repetitive drawing operations. Ellipses are still approximated with polygons, which makes precision work on ovals impossible, and the single Undo is irreversible. Perhaps most surprising is that the program uses only stroke fonts, although you can use Macintosh fonts in documents destined for a printer.

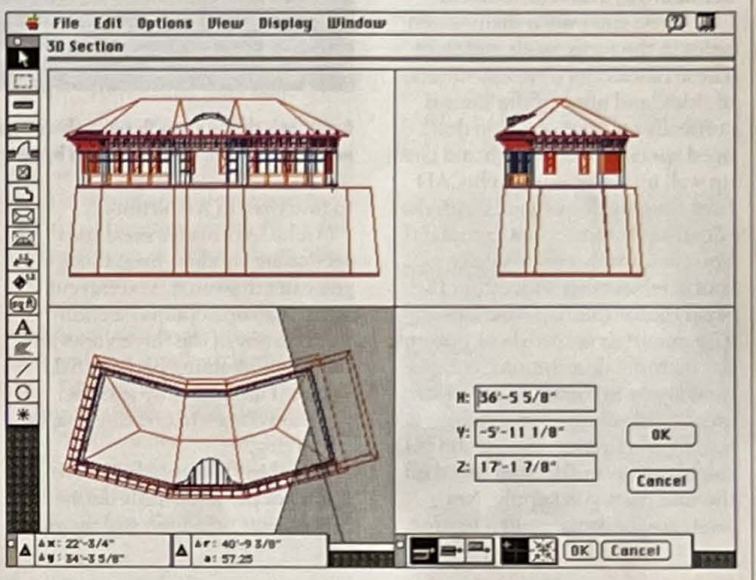
More like a Mac. ArchiCAD has a new interface, but you still draw 3-D objects only in plan. You must always type in the height values of objects, either through dialog boxes or in the extensive macro language for defining arbitrary shapes. Most architects are intimidated by the macro language, but there is an expensive escape route when it is time to design details; ArchiCAD faithfully imports objects directly from Paracomp Inc.'s Swivel 3D or from any program that creates 3-D DXF export files.

ArchiCAD has become more Mac-like with the addition of a selection tool for moving and stretching objects with the mouse and an unlimited, reversible Undo command. Moreover, the text tool uses standard fonts, and the documentation has been vastly improved and properly indexed.

The most spectacular improvement, however, is the new photo-realistic renderer. It accurately accounts for surface attributes and correctly casts shadows from its single parallel light source in 24- or eight-bit dithered color. You can define a block's color, specular reflectivity, diffuse reflectivity, transparency or emission (for glow-

See CAD, next page

The dormer in this image was imported to ArchiCAD from Swivel 3D. Renderings can use Phong shading and textured surfaces, which produce a more lifelike image than Architrion's flat shading. The illustration is by Johnson & Johnson Design/Build and Urban Design.



ArchiCAD's sectioning window is showing several views of a structure. You can't draw in the window, but you can cut oblique sections from any of the views and save them as 3-D objects.

SYSTEM 7 COMPATIBILITY

Features	Architrion II	ArchiCAD 4.0
Balloon help	No	No
TrueType	No	Yes
Publish and subscribe	No	No
Apple events	No	No
32-bit addressing*	No	Yes

*According to vendor.

SCORE CARD

High-end CAD programs

MacWEEK

Categories	Architrion II	ArchiCAD 4.0
Overall value	○	○
Performance	○	○
Features	○	○
Ease of use	○	○
Documentation/support	○	○
List price	$3,995	$4,450

● Excellent ○ Very good ○ Good
⊙ Average ○ Below average

ON BALANCE

High-end CAD programs

MacWEEK

These two expensive, integrated programs for architectural design use the same block metaphor for drawing buildings. Each works off a central 3-D model, so all drawings and renderings remain consistent.

▸ **Architrion II-Series 5.5** lets you draw in the third dimension, but roof and wall construction are cumbersome. The program redraws quickly at the expense of high accuracy. Import and export capabilities are limited to 2-D files, and the 2-D drawing tools are complete, but the program lacks a macro language.

▸ **ArchiCAD 4.0** works in the third dimension only via the keyboard, but capable tools make work go faster. An improved macro language and extensive 3-D import and export features let you work with any 3-D object, but 2-D drafting capabilities are limited. The program is slow but has high accuracy and superior Phong shading for renderings.

CAD

From previous page

ing surfaces) in the new Materials dialog box. You have a choice between flat shading, which shows the facets that make up curved shapes, or the slower Phong shading, which smooths over the facets. You also have the option of exporting your model to Pixar's MacRenderMan or Strata Inc.'s StrataVision 3d to enhance the realism of surface textures and to add multiple light sources.

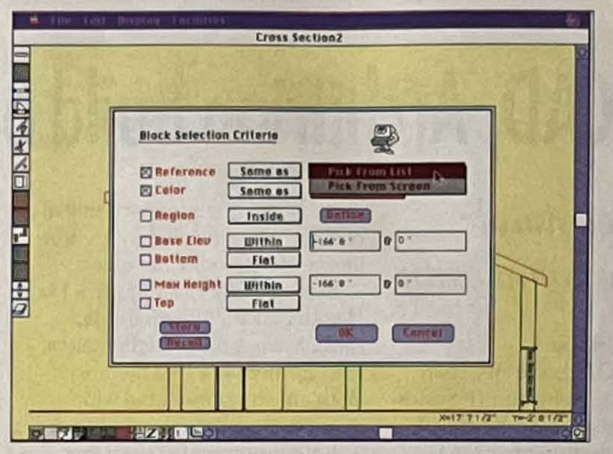
Many of Architrion II's 3-D restrictions don't apply to ArchiCAD. There is an unlimited number of layers available in ArchiCAD. You can punch many-sided holes in the roofs, walls and slabs. These blocks can have any number of sides, and none of the sides is vertically constrained. You don't need special tools to align and clean up wall intersections; ArchiCAD fixes roughly drawn joints with the Clean-up Intersections command. You can quickly create perfect roof intersections with either the Snap tool or the Hip Roof tool. The materials spreadsheet presents the material descriptions, component layers in the walls and block areas (and volumes) in a more intelligible fashion, and ArchiCAD calculates cost estimates based on the unit costs you supply. Net areas are, however, much harder to find than in Architrion.

Architrion's shaded views throw shadows from a single, user-definable light source. All surfaces have a matte finish. This illustration is by Gerard Ives Architects.

ArchiCAD makes good use of its sectioning window, even though you can't draw in it. You can cut more than one oblique section plane in any of the three views and save the remaining part as a 3-D object. This is as close as either program comes to creating shapes by carving.

Graphisoft offers a large free library of parametrically defined 3-D objects, windows and doors, and many are included with the package. Doors and windows are supplied as both 3-D figures and related 2-D symbols for automatic placement in plan views.

The 2-D associative, Linear-Dimensioning tool is improved, but the program still lacks radial dimensioning and an oval tool. You can't construct tangents, perpendiculars or fillets directly, but you can snap to lines and intersections in all the expected ways.



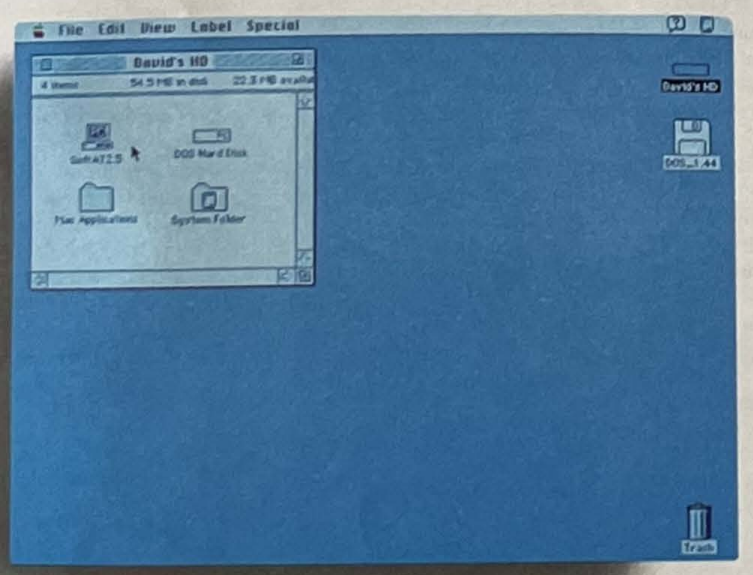
Architrion lets you select blocks by a variety of attributes, including color, height, base elevation, region and more. You can draw in any vertical section.

ArchiCAD 4.0 runs twice as fast as the previous version, but redraws are still slow: It took 37 seconds to redraw 2,500 rectangles on a Mac IIcx. The slowdown is because of ArchiCAD's appreciably higher accuracy of more than six decimal places. The renderer, however, is surprisingly fast.

Conclusions. These integrated programs for designing complex, enclosed spaces increase productivity by maintaining consistency over all documents in the proposal and development stages. Although Architrion II has a more complete set of 2-D drawing tools, the program suffers in the big picture because it is isolated from the modeling world. ArchiCAD's fluid 3-D importing and exporting capabilities let you use the program as the hub of your personalized design wheel, and it produces a more professional end result as well. The renderer has leapfrogged past Architrion's flat shader, and the materials spreadsheet also automatically tracks costs. We still wish you could draw in ArchiCAD's third dimension, but the improved interface and macro language let you indirectly model any form in ArchiCAD.

UNIC Inc. is at 130 Pleasant St., Brookline, Mass. 02146. Phone (617) 731-1766; fax (617) 739-7402.

Graphisoft is at 400 Oyster Point Blvd., Suite 520, South San Francisco, Calif. 94080. Phone (415) 737-8665; fax (415) 871-5481. □



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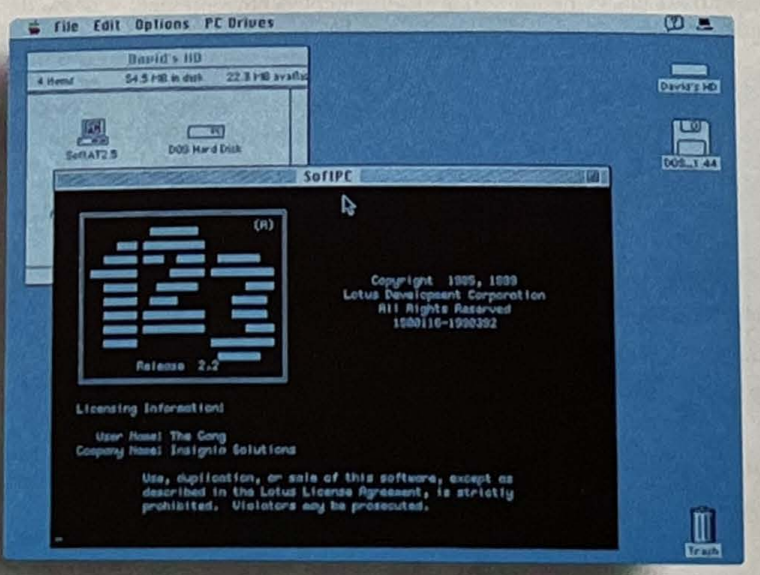
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Trash

Click,
It's A Mac
And A PC.

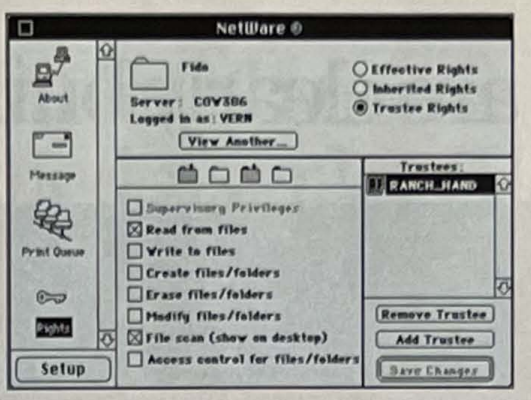
NetWare

From Page 48

folder and file security functions are available from the Finder. Also, there are some special NetWare capabilities, such as broadcast messages, that aren't supported in the current AppleShare client software. Users must use the NetWare desk accessory and extensions to access these functions.

Mac (deputy) traffic cop. The NetWare Control Center application gives the administrator access to several NetWare management functions from a Macintosh. As you'd expect, users can be added, modified and deleted; groups can be defined and assigned users; volume, folder and file permissions can be specified. NetWare Control Center is easy to use and will be familiar to anyone who has experience with AppleShare Admin.

Most of the really serious network-management chores must be performed at the NetWare system console. You can load several management utilities on the server at once and switch between them. All the modules can carry out their duties in the background.



The NetWare DA allows users and administrators to control security settings for which there are no corresponding AppleShare privileges.

DOS-like commands must be entered to turn the server off and perform other special maintenance procedures, but most of the modules use a pleasant graphical interface that helps minimize typing. Two of these tools are worth special mention: Monitor is a server watchdog that gives a bevy of useful statistics on server operation, and ATCON provides useful AppleTalk functions, much like Apple's Inter•Poll Network Administrator's Utility.

Conclusions. Novell's NetWare 3.11 allows Macintosh, DOS, Microsoft Windows 3, Unix and OS/2 users to access the same files via their native operating system conventions. It also supports IPX/SPX, AppleTalk and TCP/IP. This integration is augmented by top-notch network-management software and support of an extensive array of server configurations offering fault tolerance.

Don't invest in NetWare if you have a pure Macintosh network or a small network. Its special — and expensive — capabilities won't mean much if you don't use them. However, if you need to share files and printers among many PCs and Macs, NetWare for Macintosh 3.0 is a professional and reliable way to integrate your enterprise's computing resources.

Novell Inc. is at 122 East 1700 South, Provo, Utah. Phone (801) 429-7000 or (800) 453-1267. □

SYSTEM 7 COMPATIBILITY

NetWare for Macintosh 3.0	
Balloon help	No
TrueType	n/a
Publish and subscribe	n/a
Apple events	No
32-bit addressing*	Yes

**According to vendor.*

Minitab

From Page 50

Minitab Release 8 runs on all Macs from the Plus on up. While it runs System 7.0, it doesn't take advantage of System 7.0's special features. The fact that such a powerful program requires only 1 Mbyte of RAM is exemplary. Two versions of the program are provided: an accelerated one for machines with math coprocessors and one for the Mac Plus, SE and Classic.

Conclusions. While it's easy to criticize Minitab's interface, we should note that Minitab's primary competition — Systat from Systat Inc. of Evanston, Ill., and SPSS from SPSS Inc. of Chicago — has the same mainframe heritage, multiplatform user base and underlying command-line syntax. Systat has a similar menu and dialog overlay, while SPSS has the most complete set of additional statistical function packs. For educational purposes, and where Minitab is a standard at mixed-platform sites, Release 8 will be greatly welcomed as a major improvement that makes it much easier to use than before.

For those who need even more statistical functions or horsepower, and these people know who they are, Systat or SPSS may be the better choice. For the more casual business or academic user, and especially those involved in exploratory data analysis where 3-D color spin and contour graphs have become the norm, Data Desk from Data Description Inc. of Ithaca, N.Y. (Data Desk was sold by Odesta Corp.) and Cary, N.C.-based SAS Institute Inc.'s JMP (see MacWEEK, Jan. 9, 1990) are true Mac programs with all the amenities. Data Desk is more powerful. JMP is easier to use and is an excellent educational package.

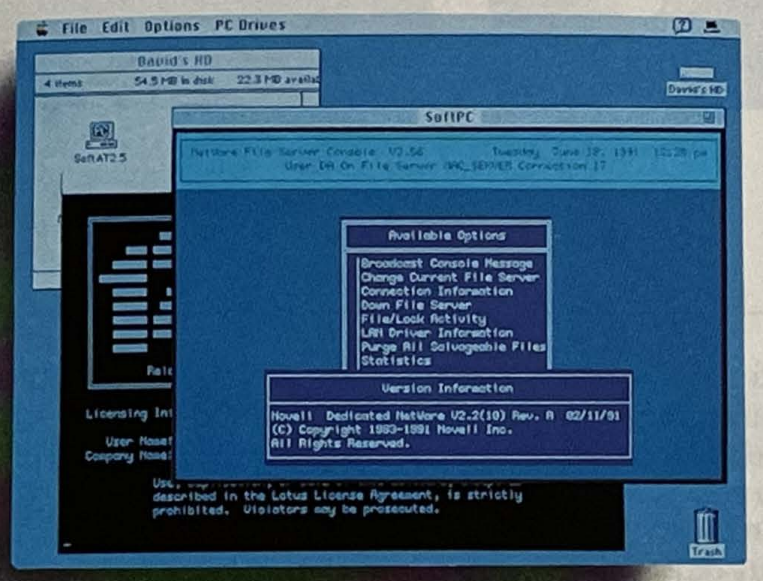
It's a real pity that none of the big stat companies, with the benefit of their know-how and existing statistical engines, has created a powerful Mac stat program from the ground up.

Minitab Inc. is at 3081 Enterprise Drive, State College, Pa. 16801. Phone (814) 238-3280; fax (814) 238-4383. □

SYSTEM 7 COMPATIBILITY

Minitab Release 8	
Balloon help	No
TrueType	No
Publish and subscribe	No
Apple events	No
32-bit addressing*	Yes

**According to vendor.*



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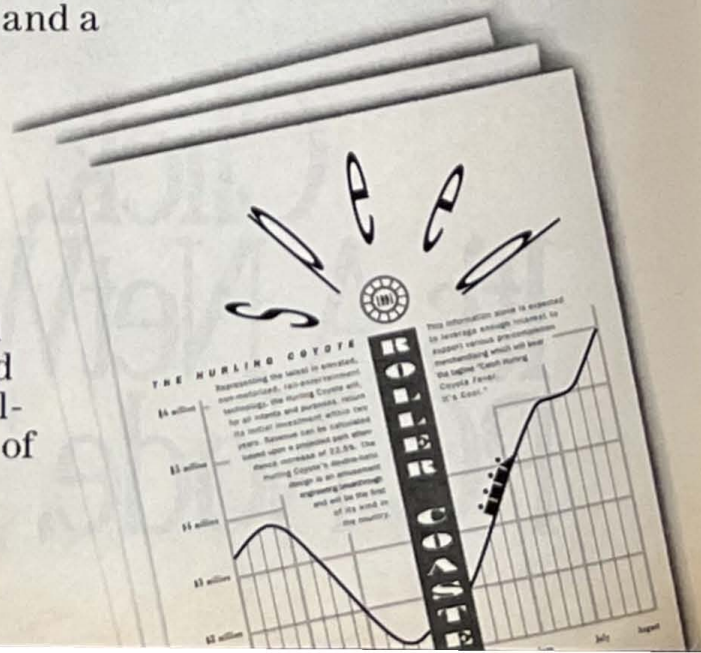

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Spectra*Star shines in printer pack

*The Spectra*Star Model 430 from General Parametrics offers the usual features, but its price makes it stand out in the crowded PostScript-compatible color thermal printer market.*

By Steve Hannaford

Since PostScript-compatible color thermal printers have become almost as common as black-and-white laser printers, vendors have had an increasingly hard time differentiating their wares. The Spectra*Star Model 430 color thermal PostScript printer from General Parametrics Corp. is a serviceable unit with no particular distinctions and one major flaw.

Priced at $6,995, the printer matches the current industry standard, its speed seems pretty good and its color quality is fine — neither oversaturated nor muddy.

Based on the Sharp Electronics Corp. engine rather than the more common one from Mitsubishi International Corp., the machine is stable and workable. Installation was simple, and the only mechanical problems we encountered were easy-to-fix paper jams. The machine offers an AppleTalk port, as well as serial and parallel ports for IBM PC and compatible users.

We managed to get the printer operational in less than 15 minutes.

Like most machines in its class, the Spectra*Star supports both special paper and special transparency material. Alternate trays are available for both letter- and legal-size paper. And like most of its competitors, the Spectra*Star supports three kinds of thermal ribbons: black (not very useful); CMY (cyan, magenta, yellow) ribbon for normal color work; and CMYK (cyan, magenta, yellow, black) ribbon, recommended for work with lots of gray detail. Based on the cost of replacement ribbons and special paper or transparency material, the base cost for media is about 50 cents per page for paper and $1.50 per transparency, also about average for the industry.

The RISC (reduced instruction set computing)-based CPU provides rapid throughput. Our complex test pages, with four downloaded typefaces and TIFF, PICT and Encapsulated PostScript graphics, printed in less than six minutes, a very good result for a four-color file.

The machine comes with 6 Mbytes of RAM. It has no hard disk nor a SCSI port. However, model 440, to be released later this year, will have a built-in hard disk for storing fonts. The lack of disk capacity may be a factor in whether you decide to purchase the current model.

We have found printer vendors to be very coy about stating which PostScript clone they are using, while Adobe licensees usually are not so reticent.

In this case, General Parametrics is using the software from Pipeline Associates Inc., a Level 1 clone that claims compatibility with PostScript Version 50.3. The interpreter ran all our test files without error, but the usual caution should apply for those who believe authentic Adobe PostScript is critical.

The interpreter is ROM-based and includes the standard 35 fonts. No current plans exist for upgrading the interpreter, but it is physically possible through a ROM swap, according to the company.

Imaging size. Our main problem with the printer was its imaging size. The first 8.5-by-11-inch page that we ran, output from Microsoft Word, had the first line cropped off. When we checked the manual, we found that the maximum imaging size was only 8.11 by 8.82 inches, in other words, with a margin of more than an inch at the top and bottom. This is documented in the manual but is likely to take some users by surprise and limits the use of the printer for comping color pages. It is possible to image a full page on legal-size paper (8.11 by 10.83 inches), but that involves cutting paper, not a very satisfactory solution.

The manual is reasonably complete, with good troubleshooting diagnostics and a short appendix on how color thermal printers work. Instructions for Mac users (generally simple) and PC users (often complex) were too often jumbled together, making for less-than-coherent reading at some points. Mac users have to skip through lengthy discussions of Targa file aspect ratios and HP-GL programming to get to the good stuff. A quick-reference card is supplied, however, with most of the useful Mac information. The manual also included a short and useful section on printing from Claris Corp.'s MacDraw II, explaining some potential problems and offering work-arounds.

Conclusions. Except for the imaging-size problems, which may loom very large to some users, the Spectra*Star seems like a reliable, high-quality printer at a very reasonable price. As thermal printers begin to look more and more like commodity items, price may well become the distinguishing factor.

General Parametrics Corp. is at 1250 Ninth St., Berkeley, Calif. 94710. Phone (510) 524-3950; fax (510) 524-9954. □

SCORE CARD

Spectra*Star Model 430

MacWEEK

Overall value	●
Performance	●
Features	●
Installation/configuration	●
Compatibility	●
Documentation/support	●
List price	$6,995

● Excellent ● Very good ● Good
◉ Average ○ Below average

ON BALANCE

Spectra*Star Model 430
General Parametrics Corp.

MacWEEK

The Spectra*Star Model 430 is a good, standard, color thermal PostScript-compatible printer with a modest price. A relatively small imaging area on letter-size paper and the lack of a hard disk may be turnoffs for some potential buyers. However, the machine is fast, and the PostScript-compatible RIP (raster image processor) is solid. The documentation is reasonably complete but mixes Macintosh and PC instruction in a confusing manner. On the whole, it is a competently packaged product, but its price may be the main attraction.

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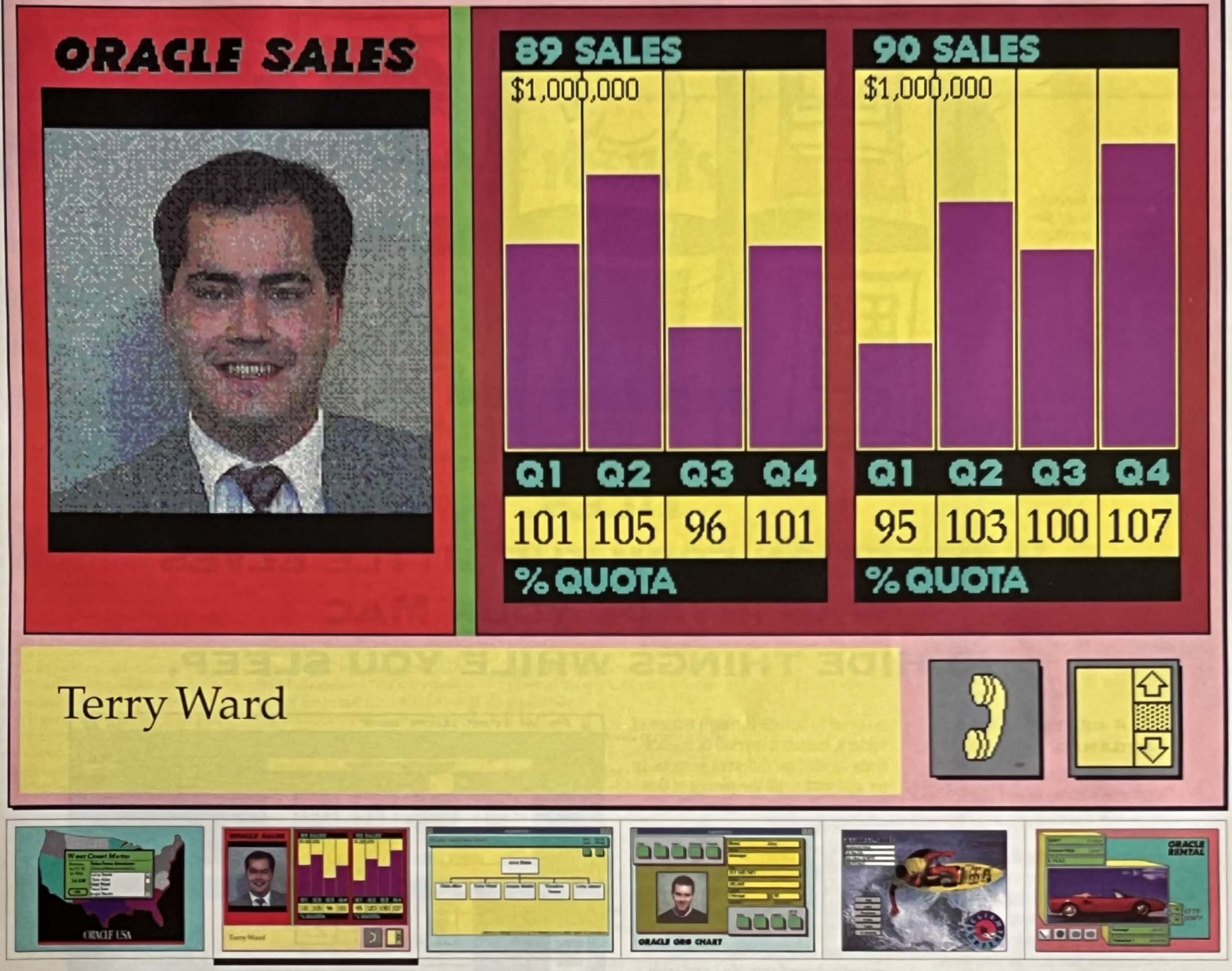

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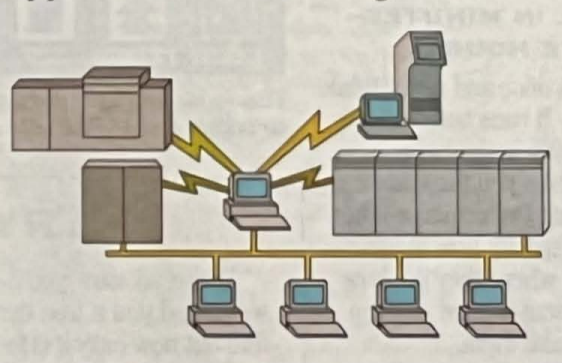

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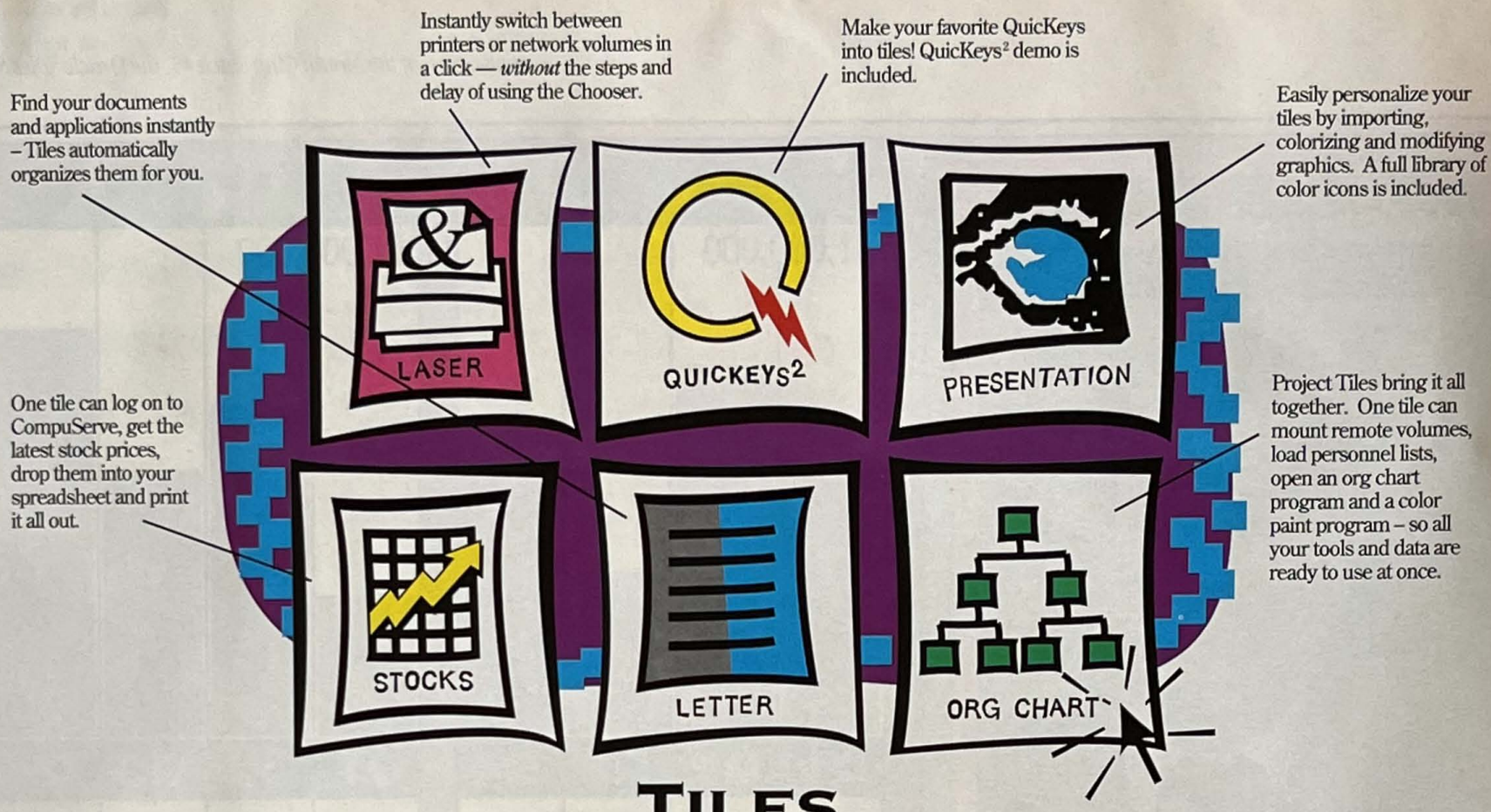
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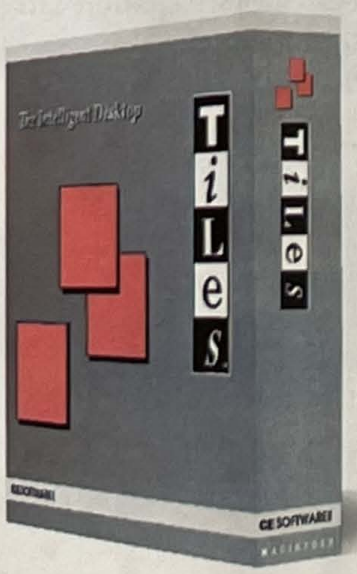

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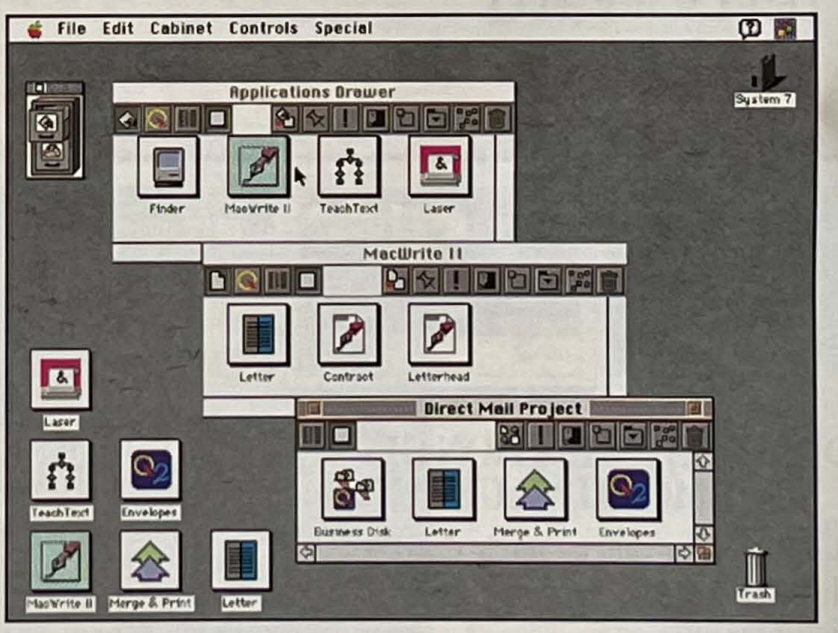

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Mac consultants net results

Independent consultants can assist in solving your networking problems, whether your LAN is small or large, simple or complex.

By Linda Jacobson

Are you faced with the task of orchestrating communications among the Macs in your office? Although simple Macintosh networking is a do-it-yourself proposition, more-complex systems can present problems.

You could call a LAN software or hardware vendor. If you reach the technical-support department, you'll get a response based on that company's latest product release. Or you could seek the wisdom of Macintosh network gurus.

Whether yours is a 150-Mac company using AppleTalk and an Ethernet backbone to talk with IBM PCs and compatibles in 12 cities, or an office ready to upgrade a 10-Mac LAN to System 7.0, independent computer consultants can help select, install, configure, implement, document and maintain a network best-suited to your needs — and even train employees to use it.

Finding a consultant. Hundreds of self-taught Mac experts offer consulting services; companies range in size from one person to 20 or more. The most reliable way to locate the right one is via word of mouth — nothing beats personal references.

You might start by reviewing ads in Mac user-group newsletters and notices on electronic bulletin boards, then call your leads to discuss your situation. If you know a business that operates efficiently on its Mac LAN, ask who consulted on the system. You also could post a request for referrals on your bulletin board service.

San Francisco-based financial-industry LAN consultant Bob Pasker divides his colleagues into two groups: those who specialize in a specific area, such as Novell or TCP/IP, and those with a broad spectrum of experience who integrate heterogeneous platforms. What you need depends on your system.

It's usually best to find someone who has a broad perspective, unless you just want to add a computer or fix a specific problem. "The best way to start is with an open, honest discussion," said Michael Leonardich, who manages LANs for Mac-oriented DHL Airways Inc. of Redwood City, Calif. "See if the consultant can meet your needs at a price you can afford. The trick is to find folks who offer a set of options and help you make an informed decision."

Every consultant favors certain solutions for given problems. "They'll recommend hardware or software they've had the most experience with," said Matthew Leeds, technical information services manager at Broderbund Software Inc. of San Rafael, Calif.

Leeds, who oversees a 100-user AppleShare network, adds that the best solution for your needs may not necessarily fit your budget. "But [a consultant will] look at your situation and try to balance it out," he said. "A true consultant sells you expert advice, not equipment."

Vendors sometimes offer consultation and pitch a mix of hardware and software depending on lines they carry. LAN equipment vendors, such as Farallon Computing Inc. of Emeryville, Calif., and Network Resources Corp. of Milpitas, Calif., have clear interests in selling their own products, but they also provide configuration, installation and telephone support.

Independent consultants possess resale licenses, so they can buy any equipment at cost. "Some brands and models work better, but I'm not affiliated with any company," said Robert Missbach, a consultant in Mill Valley, Calif. "I pick the best value and warranty."

Broderbund is in the process of moving to a new building and creating a 10BASE T network. When selecting a vendor, "we wanted a local [value-added reseller] that offered network maintenance, installation, and physical and software implementation," Leeds said. "We found our consultant through someone in the company who knew of his work. He has a good reputation."

Credentials and certification. "My reputation is my certification," Pasker said. Every consultant has different credentials; selecting a consultant often is based largely on qualifications.

Some manufacturers, such as Novell Inc. of San Jose, Calif., and 3Com Corp. of Santa Clara, Calif., offer certification based on service training. Being part of the Apple Developers Program indicates some expertise.

Apple also launched its Apple Consultant Relations program to track the growing base of independent Macintosh consultants. Members receive product announcements and technical support through seminars and qualify for AppleLink accounts. Apple classifies members by service type and publishes an annually updated directory.

Membership in organizations such as the Independent Computer Consultants Association also can signify professionalism. The nonprofit ICCA has chapters in most metropolitan areas; it holds chapter meetings and an annual national conference. It also sponsors an open forum on CompuServe (type GO CONSULT).

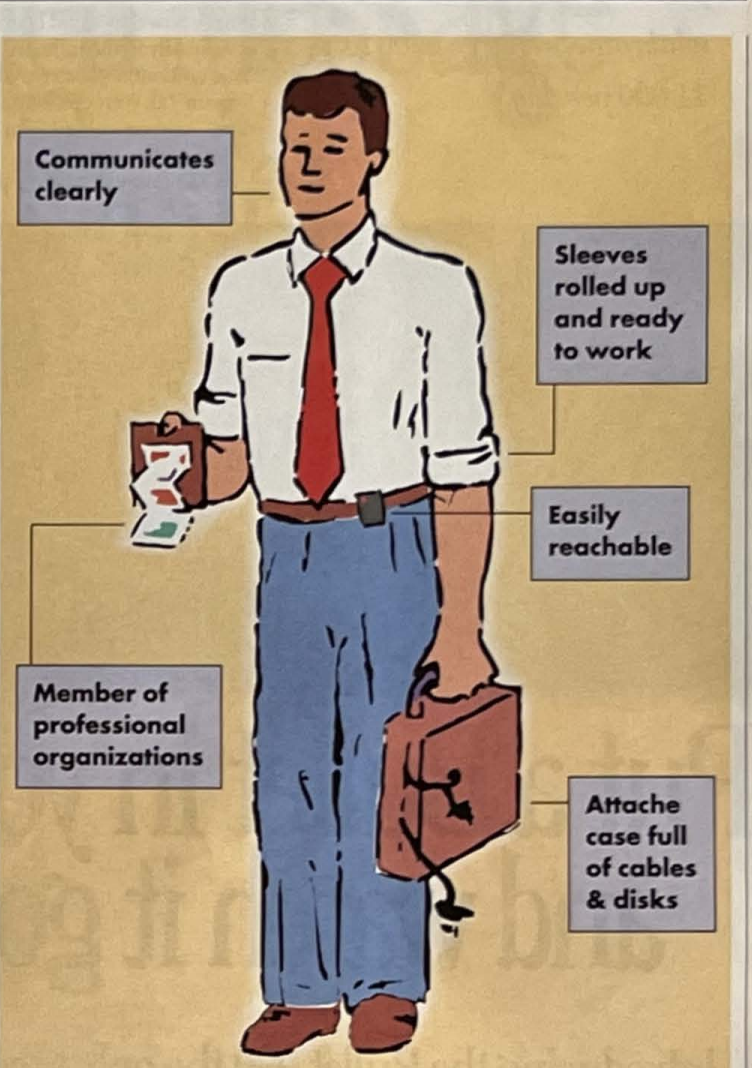
ICCA maintains a member database and by year-end will install an electronic directory with information about each consultant, including platform-specific data.

Certification is an important issue to ICCA. The group sits on the board of directors of the Chicago-

See Consulting, next page

PriceWatch
CONSULTATION CHARGES

CONSULTANT	HOURLY FEE	LOCATION
Bob Pasker	$100-125	San Francisco
Boston Systems Group Inc.	$150	Boston
Robert Missbach	$50	Mill Valley, Calif.
Michael Goulden	$75	Des Moines, Iowa


Communicates clearly
Sleeves rolled up and ready to work
Easily reachable
Member of professional organizations
Attache case full of cables & disks

What to look for in a network consultant

What is the consultant's focus or specialization?

- ☐ AppleShare
- ☐ Novell NetWare
- ☐ 3Com 3+Open or 3+Share
- ☐ LANs
- ☐ Wide-area networks
- ☐ Remote networks

Type of recommendation?

- ☐ Personal
- ☐ Professional

What memberships/certifications are held?

- ☐ Certified service expert by certain manufacturers
- ☐ Apple program
- ☐ Independent Computer Consultants Association
- ☐ Institute of Certified Computer Professionals
- ☐ Any other professional organization

What kinds of assistance are offered?

- ☐ Advice only
- ☐ Equipment-purchasing services
- ☐ Employee training
- ☐ Physical system installation; if so, does this include:
  - ☐ Cabling
  - ☐ Complete software implementation
  - ☐ Special programming
  - ☐ Continuing maintenance

Can the consultant communicate clearly — verbally and in writing?

☐ Yes ☐ No

Is the consultant easily available during business hours, year-round?

☐ Yes ☐ No

KEVIN BERGER

Most consultants' fees range from $50 to $125 per hour, while others charge $500 to $1,000 per day.

Consulting

From previous page

based Institute of Certified Computer Professionals and recently started studying certification of consultants, acknowledging challenges posed by rapid changes occurring continually in the industry. "If you acquired Mac credentials last year and now out comes System 7.0, your credentials would be out-of-date," said consultant Sam Goldberger, also of Mill Valley.

ICCA intends to develop national certification that encompasses training, accreditation, skills and ethics; it is building a body of knowledge to identify standards and practices.

Consultation costs. Nationwide, most consultants' fees range from $50 to $125 per hour, while others charge $500 to $1,000 per day. In a recent ICCA national survey of average hourly billable rates, 75 percent of members surveyed quoted rates in the range of $40 to $80 per hour, while only 14 percent charged more than $80 per hour.

Some large consulting companies that are actually vendors charge a low hourly rate because they make it up on equipment sales.

Other large companies, such as Boston Systems Group Inc., charge $150 per hour and up. BSG is a systems integrator and consulting company with major clients throughout New England that operate on multiple computer platforms. "As the project gets more complex and involved in aspects of business operations, you pay higher rates because there's value added," said Bob Walsh, BSG vice president. "Higher rates offer the client a proportionately higher return. You're looking at cost/benefit justification that could extend over years."

On the other hand, Missbach, who provides Mac-only services, said: "My service is usually long-term, so my basic rate is $50 an hour, which lets small companies stay with me."

Other one-person companies charge more because they work with complex, multiplatform networks. Pasker, a consultant with San Francisco Bay area and New York clients, charges $100 to $125 per hour. He said: "I have many resources and am well-connected in the networking industry. If they don't like what I've done, they don't pay me."

Consultants also should help you develop system requirements and specifications. They should provide a written report describing a system that meets your needs and a cost estimate that suits your pocketbook. The report also should encompass plans for future expansion. The consultant should be able to buy hardware and software, install and configure it, and perhaps train employees to use it.

Hidden costs. It's important to query consultants about "hidden" costs, because some consultants recommend equipment but don't actually buy it or install the network. BSG, for example, offers network design, selection and evaluation, but not physical implementation. It recommends other contractors to drill holes and pull wire.

Other potential hidden costs include equipment purchases and electrical or phone company participation. Ask if you'll need to hire a building contractor to ensure you're not violating code.

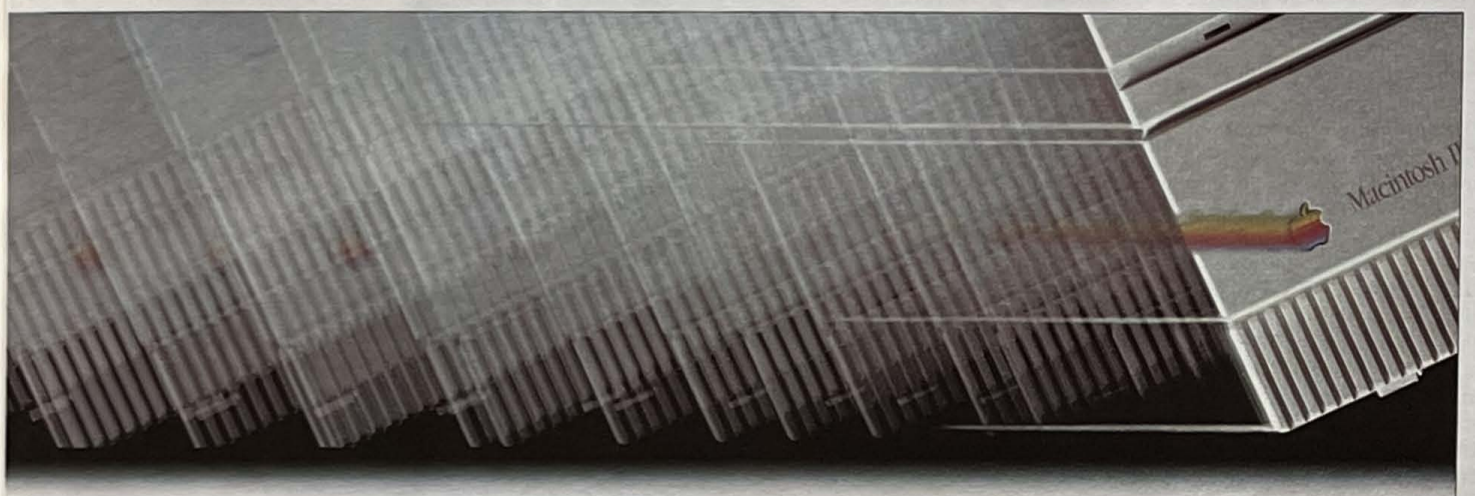
Also, remember that computer systems need continual attention. Consider a service contract. The amount, usually a retainer, is negotiable depending on system size and client needs. If your file server's drive ever crashes, you'll be grateful you paid that monthly fee.

What to expect. "There's no single correct answer in a network implementation," Leeds said. "If you bring in enough consultants, you get a variety of potentially good solutions. The hard part is figuring out which one is right for you. That's why there is no substitute for doing your homework before you bring in consultants."

Said Goldberger: "You'll want to find someone reasonably smart, competent and conscientious." Other than that, if you don't care about a specific network product, all that matters is that the results work and the consultant sticks with the project until it meets your needs.

That's why, as Pasker said, "It's important to tell the consultant where you are today and where you want to be."

Pasker noted that it's important to research the technology and list your needs so you don't waste the consultant's time, for which you're paying a lot. "Besides," he said, "how can you decide if the consultant's giving you what you want, if you don't know what you want?" □



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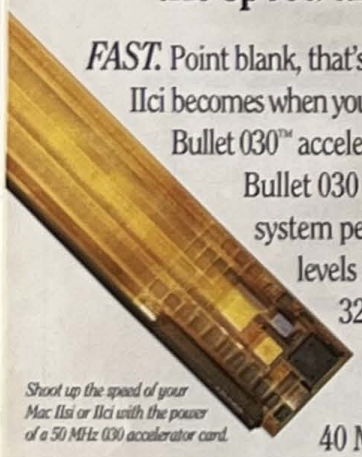

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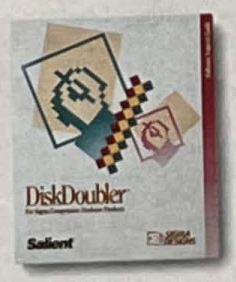

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DiskDoubler™ included	Yes	No
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GORDON STUBER

MacInTouch RIC FORD

Tracking down 32-bit bugs in other ROMs

Programs that run on your Mac load not just from disk, but also from ROMs on NuBus and PDS cards. These programs, too, must coexist with 32-bit addressing and virtual memory.

BUGS & TIPS

ROM tracking. When MacWEEK contributing editor Bruce Fraser extended his Mac memory configuration beyond 8 Mbytes recently, he started having problems with applications that should have been trouble-free. His detective work turned up a solution and provided us with a lesson in System 7.0 compatibility.

The bugs were lurking in an area of software that we tend to ignore: the ROMs on a NuBus card. Like any other Mac program, those loaded from ROMs on NuBus cards, processor direct slot cards or other expansion hardware must be compatible with 32-bit addressing and virtual memory to work correctly in System 7.0.

The ROMs on this particular card, a ColorBoard 264 display card from RasterOps Corp., were not compatible with 32-bit addressing. Curiously, the problem did not show up until more than 8 Mbytes of real memory were installed. Fraser had turned on 32-bit addressing previously, but the limitations of his RAM configuration had prevented the problem scenario from occurring.

Fortunately, RasterOps' technical-support department responded quickly with a 32-bit-clean replacement ROM, which fixed the problem.

The lesson to be learned is that firmware (ROMs), as well as software and hardware, should be checked for compatibility before switching to System 7.0 and using its new features. Virtually all expansion hardware includes some code in ROM, from accelerators to video cards. (This is similar to the compatibility issue with hard disk driver software, where a program hidden in a special area of the disk is loaded automatically at start-up time.) Vendors should be able to tell you whether their products are compatible or not.

Compatibility 1.1. A new version of Apple's Compatibility Checker HyperCard stack provides more up-to-date information than the original version about what versions of hardware and software work best with System 7.0.

It's available on CompuServe/Zmac in the Macintosh Developer's forum (GO CIS:MACDEV). Download file name CMPCHK.SIT from Library 8.

File-sharing gremlins. I continue to see reports from users encountering a problem mentioned several months ago: Macs freezing when running Dantz Development Corp.'s Retrospect with personal file sharing enabled (see MacWEEK, June 4). The promised fix hasn't arrived; for now, the only work-arounds are to disable Retrospect's optional Retro.SCSI extension, which will slow backup performance, or to shut off file sharing when backing up.

Database experts are warning of bugs and limitations in System 7.0's personal file sharing that prevent its use as a replacement for AppleShare or Sitka Corp.'s MacTOPS in multi-user applications. Apple is reportedly working on a fix for at least one bug for the next release.

Overextended. Ricardo Batista has released a new version of his freeware Extensions Manager (see MacWEEK, Sept. 17). Version 1.6 fixes some problems with the Save Sets feature in certain low-memory conditions, although a few bugs remain. (I experienced a crash using Save Set under System 6.0.5 at start-up time, and another user reported the same problem. Using the same function from the Control Panel appears to work.)

This version of Extensions Manager may be the last, leaving commercial programs to fill the gap. Batista has been struggling with the problems that frequently discourage freeware developers: users who are quick to criticize bugs and the lack of desired features, and beta testers who fail to find important problems.

Another issue with Extensions Manager has been distribution. Since Batista works at Apple, the program has an Apple copyright, and most on-line services will distribute it only after it makes its way through the Apple licensing process. At press time, Version 1.6 was available on AppleLink (in a Supplemental System Software folder on the Apple Software Updates bulletin board, which is located inside the Software Sampler folder) and on GEnie, but CompuServe's Mac Developers Forum was waiting to upgrade from Version 1.5.

REFERENCE

RasterOps Corp. technical support is at 762 South 400 East, Suite 202, Orem, Utah 84058. Phone (801) 226-5265 or (800) 729-2656; fax (801) 226-4010. E-mail RASTERHELP on AppleLink or Connect. □

Comments on MacInTouch are welcome at 7 Parmenter Ave., Maynard, Mass. 01754. Phone (508) 897-2621. Address electronic mail to 72511.44@compuserve.com from the Internet; to 72511.44 from CompuServe; to MACWEEKBOS from America Online, Delphi and GEnie; to RICFORD from MCI Mail or Connect. From AppleLink, 72511.44@compuserve.com@INTERNET# is the current address.

Join us on-line in the MacWEEK Forum by typing GO ZMC:MACWEEK on CompuServe or Zmac.

The Help Desk

Shiva driving toward System 7.0 compatibility

Shiva Corp., maker of the NetModem and TeleBridge lines of networking hardware, has released System 7.0-compatible versions of its network dial-in and dial-out drivers. A large file containing all the elements needed to make a new Shiva installer disk is available via on-line services. The new drivers are Version 3.6.4 and are compatible with virtual memory and 32-bit addressing. In addition to System 7.0 compatibility, there are many other (less urgent) improvements.

Ask David Ramsey

When your hard disk is too busy for its own good

Q: *Since upgrading to System 7.0, my hard disk seems to be almost constantly busy, even when I'm not doing anything. Why?*

A: This is probably because you have turned on "Calculate folder sizes" in the Views control panel. When this option is enabled, the Finder seems to compute folder sizes constantly, so it can display them in list views, such as By Name. Unless you really need to see the folder sizes — which you can always do by selecting a folder and choosing Get Info — disable this option. Your disk will be a lot quieter.

Q: *When trying to mount a shared volume across the network, my Mac always asks if I want to initialize the disk. I don't, but that means I can't mount the volume. What's going on?*

A: You're probably running an old version of Dayna Communications Inc.'s DOS Mounter. DOS Mounter is an extension that enables you to read data off DOS disks in your SuperDrive-equipped Mac. Early versions conflict with System 7.0's file sharing. Contact Dayna at (801) 972-2000 for an upgrade.

Let the Finder do it. When installed, System 7.0 creates several folders inside your System folder and uses them for specific purposes. I've run across problems that have occurred when users either move things out of these folders or put inappropriate files into them. (This point may seem basic to some of the System 7.0 power users out there, but I've gotten several letters asking that it be explained.)

When you drag a file onto the System folder icon, the Finder will tell you where it's going to put the file. The Finder makes its choice based on the file's type and it's generally right. Specifically, the maintenance of the Extensions and Control Panels folders should be left up to the Finder, unless you have good reason to disagree. In the case when you want to override the Finder's default destination, simply double-click on the System folder icon to open its window and drag the file into this window while avoiding any of the folders inside.

Please send questions to David Ramsey on CompuServe: 76702,335 or to Ask David Ramsey, c/o MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105.

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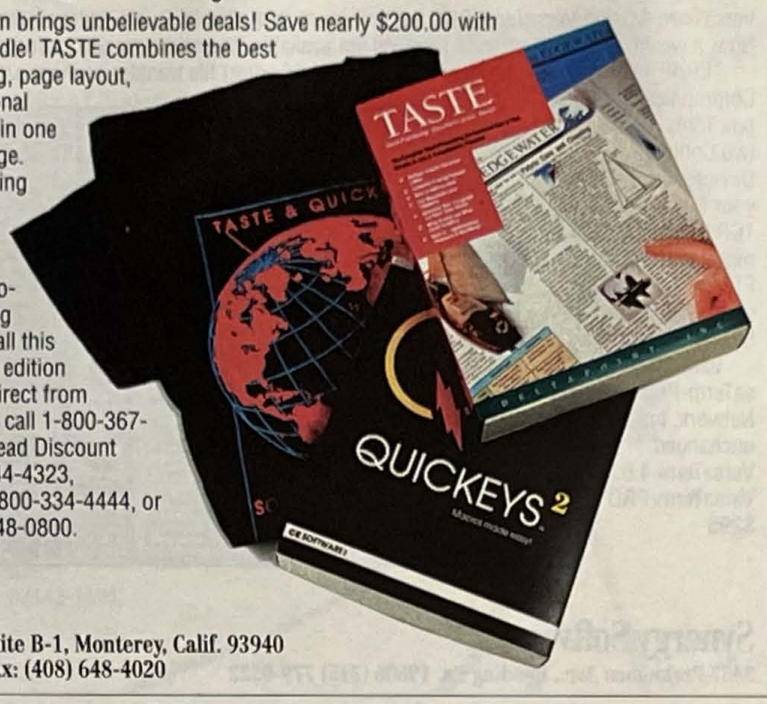

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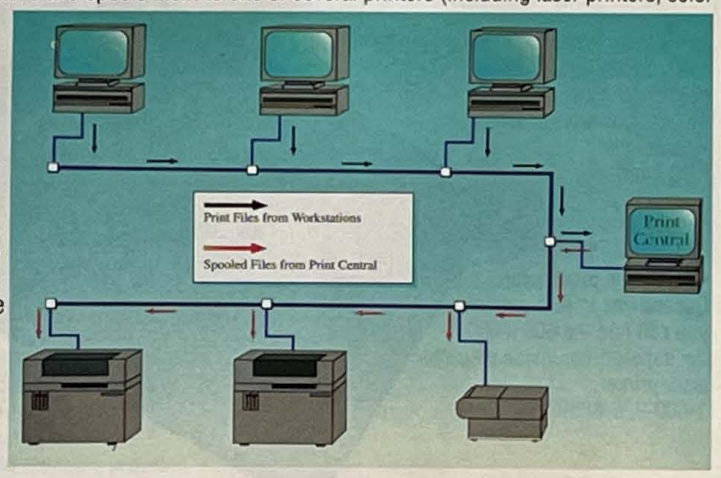

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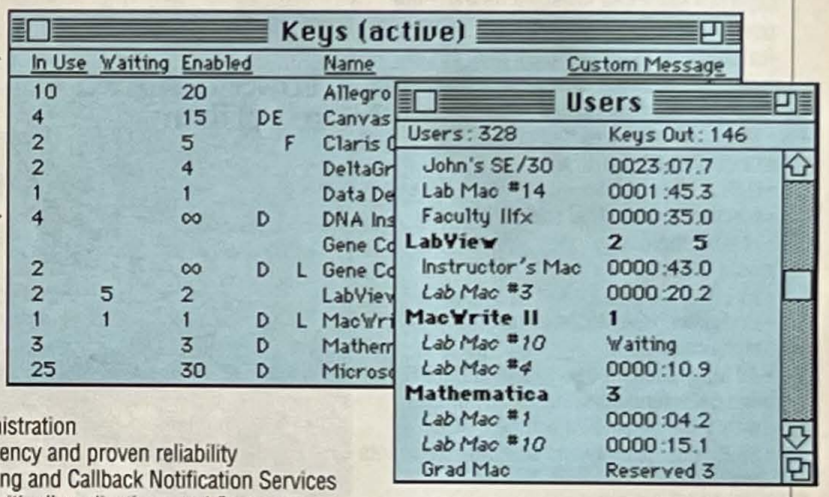

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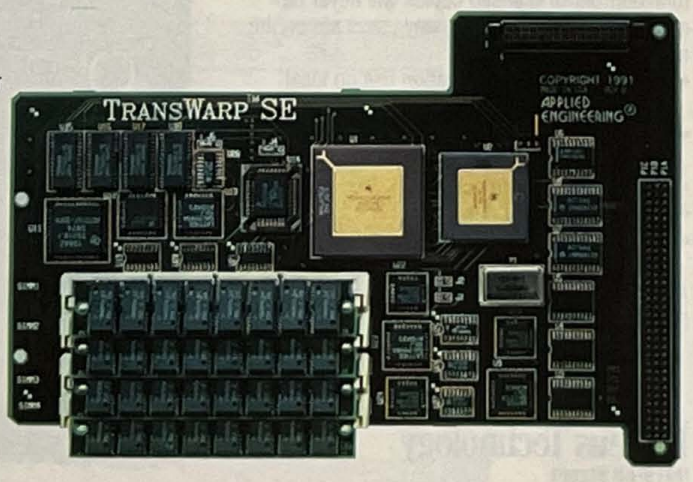

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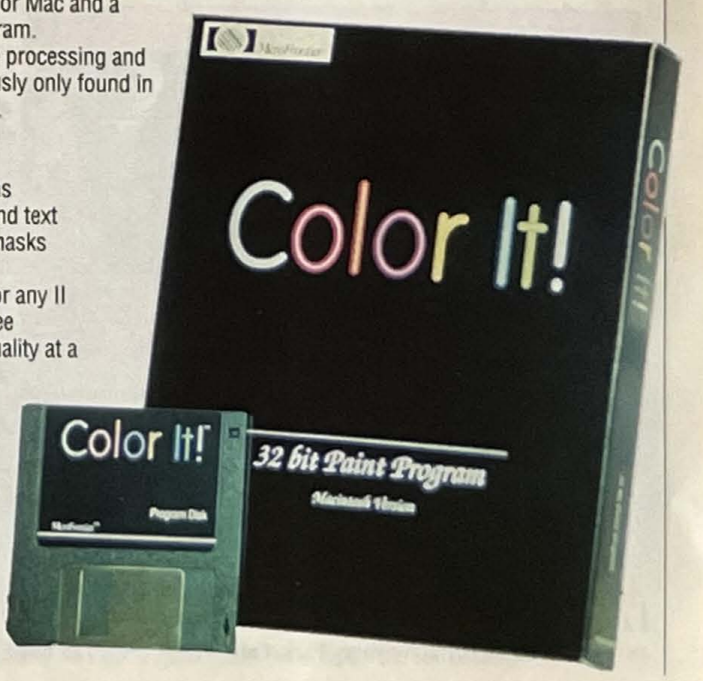

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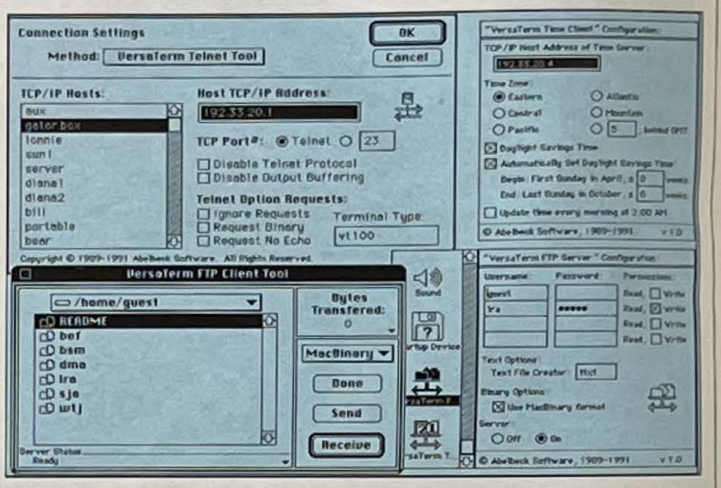

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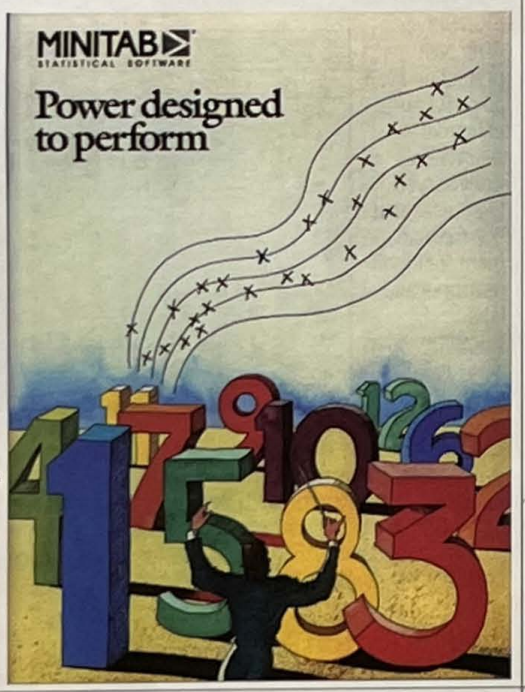

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Suggested list price is $299. Quicktel also features a full line of fax/modem products at aggressive prices.

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Hublet splits one 10BaseT ethernet line into four, eliminating the need to run extra lines from your central hub

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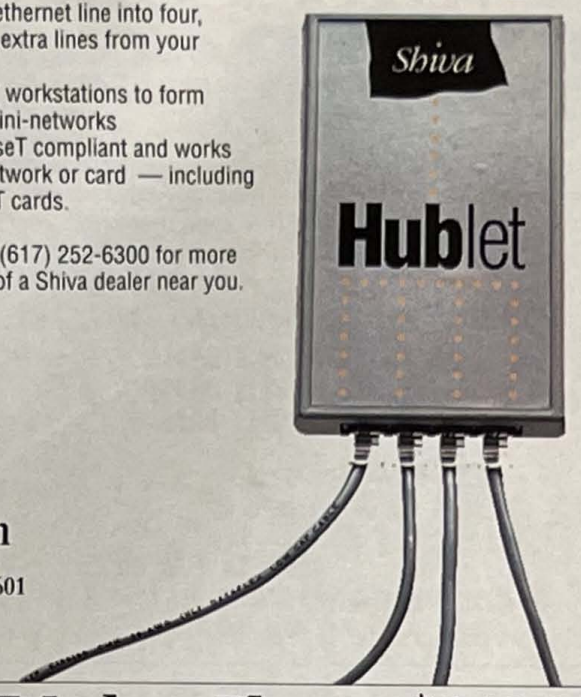
- Costs just $399.

Call (800) 458-3550 or (617) 252-6300 for more information and the name of a Shiva dealer near you.



Shiva Corporation
One Cambridge Center
Cambridge, Mass. 02142-1601
(800) 458-3550
(617) 252-6300
Fax: (617) 252-6852

System 7.0 security

"If you work in a shared environment, but don't want to share everything on your Macintosh, you may want a copy of FolderBolt... FolderBolt is a welcome addition to the Mac Security Arsenal." — MacWEEK, June 1991.

With a simple shift-click of the close box you can create completely locked folders, read-only folders, or drop folders. Once locked they can't be opened, duplicated, deleted or moved until you double-click and provide the password. They also can be unlocked all at once and re-locked at shutdown. Complete with activity logging and Administrator override. *"FolderBolt compliments the desktop.. Subtle yet sensible... Takes the edge off security... Redefines standards." — MacTutor July 1991.*

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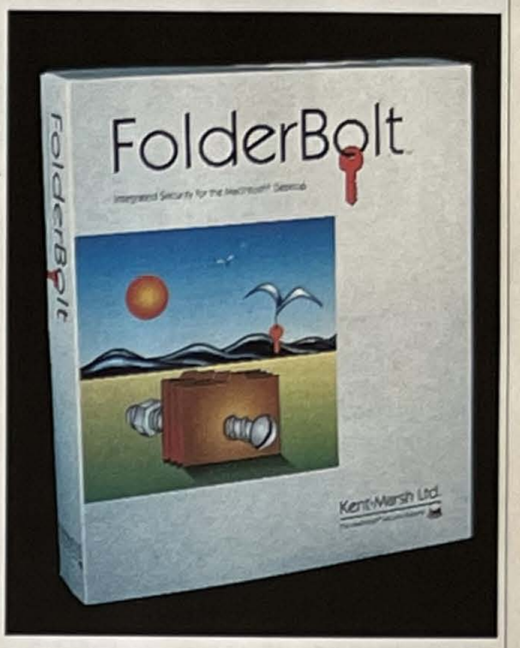

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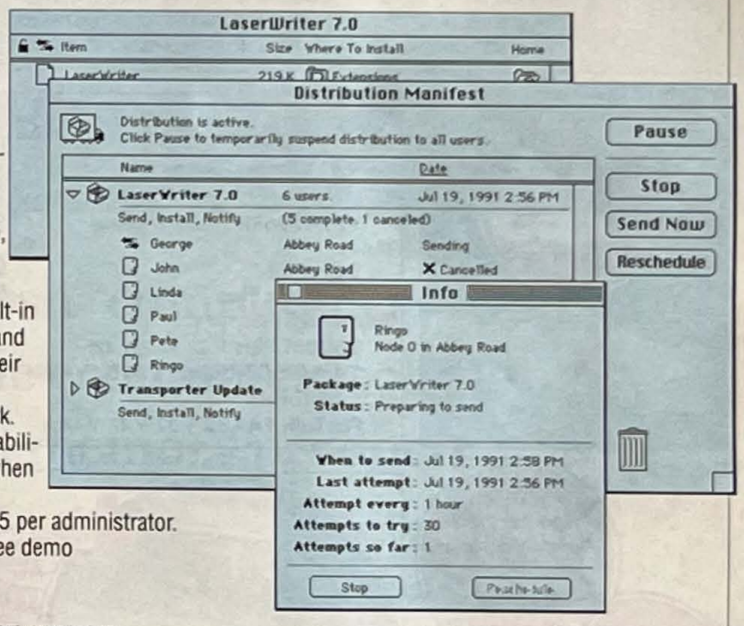
NetDistributor™ is $395 per administrator. Call to order or for a free demo



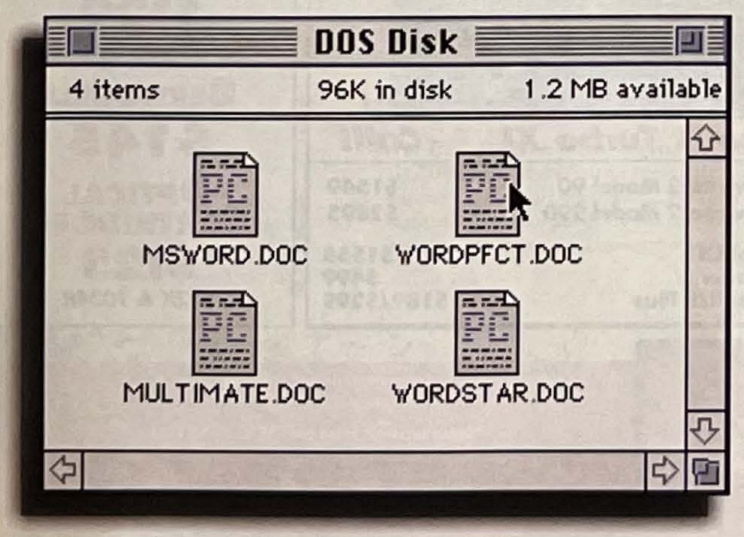
Trik, Inc.
(800) 766-0356 Fax (617) 933-8648

Double-click on DOS documents

Software Bridge/Mac makes translating DOS documents easier and more accurate than ever. Just insert a DOS disk directly into your Mac's SuperDrive and double-click. Software Bridge/Mac will automatically identify the file, translate it into the proper format, and launch it into your word processor, ready to edit!. Translates all major Mac and DOS word processors.

MacUser reports: *"MacLink Plus" performance was dramatically inferior compared with that of its challengers' (Software Bridge/Mac)."*

Includes MountPC to mount DOS disks in the Mac's SuperDrive.

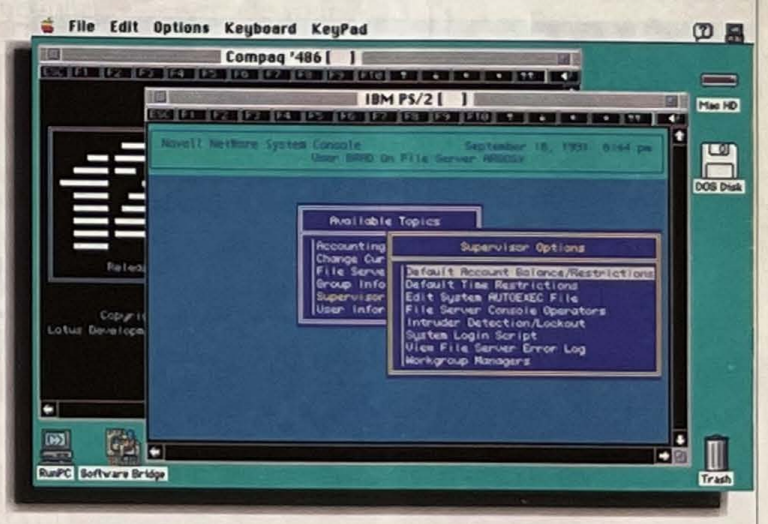


Argosy Software, Inc. 113 Spring St., 5th Fl. New York, N.Y. 10012 (212) 274-1199

RunPC does more than run DOS!

Connect any Mac to an IBM PC compatible and run DOS programs in a window –even programs which require VGA graphics, extended/expanded memory, or Novell NetWare. DOS programs run at full speed on the attached PC, but are viewed and controlled by the Mac. PCs may be connected via AppleTalk Network, Modem, or serial cable.

RunPC includes our award winning Software Bridge/Mac program to easily transfer files or translate between over 30 different word processing file formats! Also included is our MountPC utility which lets you mount DOS disks in your Mac's SuperDrive.



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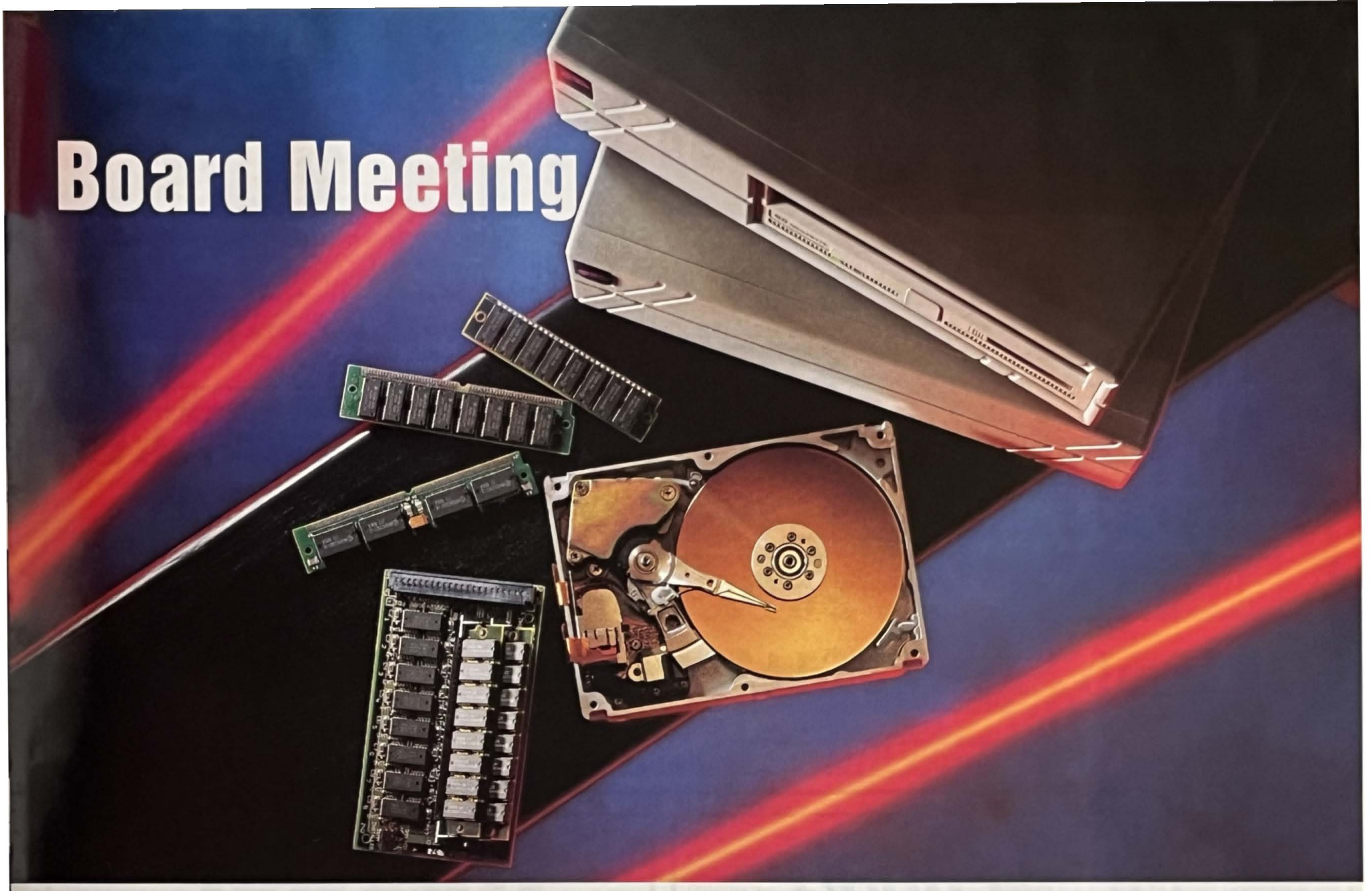

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210mb	3.5" Half Height	10ms	$619	$679
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Quantum Drives have a TWO Year Warranty!
3.5" Half Height drives are the PRO series. 3.5" Low Profile drives are the LPS series.
*3.5" Low Profile, Low Power drives for the Mac Classic, LC, and IIsi. Quantum Drives include the ClubMac Package.

ClubMac Package

SCSI Director™ Hard Disk Formatting Utility
- All ClubMac Drives are System 7.0 compatible!!
- A/UX supported • Partition & Password Protection

- ClubMac Package:
  Internal Drives include mounting brackets, cables, and ***SCSI* Director™** Formatting Utility
  External Drives include a 25/50 pin SCSI cable, power cable, ***SCSI* Director™** Formatting Utility, and a zero-footprint cabinet (two 50 pin SCSI ports, removable termination, auto-switching power supply)
- All hard drives come pre-formatted and tested.
- All drives have internal termination.
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- All capacities and speeds are manufacturer's specs. Actual specs may vary.

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All Tape BackUp Systems include a ONE Year Warranty.
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645mb	5.25" FH Wren-6	15.5ms	$1425	$1525
1.0GIG	5.25" FH Wren-7	15ms	$1989	$2089
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207mb	3.5" Half Height	13ms	$599	$659
330mb	5.25" Full Height	14.5ms	$939	$999
645mb	5.25" Full Height	16.5ms	$1395	$1495
1.0GIG	5.25" Full Height	13ms	$1929	$2029
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345mb	5.25" Full Height	16ms	$1197	$1297
645mb	5.25" Full Height	16ms	$1295	$1395
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Fujitsu Drives have a FIVE Year Warranty. Fujitsu Drives include the ClubMac Package.

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44mb	5.25" Removable Disk Drive 20ms	$429
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Dual 44mb		$779
Dual 88mb		$1099
Dual 44mb & 88mb (Includes one 44mb cartridge & one 88mb cartridge)		$1039
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SyQuest Drives have a TWO Year Warranty!
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Display System
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- Comp. for Mac IIsi & IIci built-in-video (16 colors)
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Color Display™ System
- 19" Two Page Trinitron • 1152 X 882 X 71 Hz at 82 dpi
- Includes one of the following interfaces

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- Includes the interface for the SE or Classic

Two Page Display™ System $127
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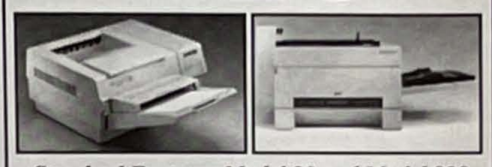

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SilentWriter2 Model 90 $1479
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OL830 LED Page Printer
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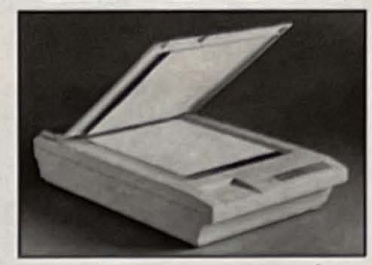

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Accelerators

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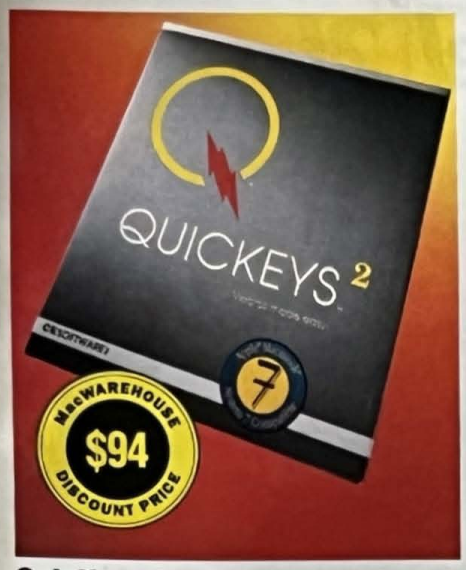

QuicKeys 2 v.2.1

(CE Software) Facilitates data being sent between applications, applications being launched, commands being executed, calculations made, and data returned to the user all without leaving the user's current working documents. Its 32 bit clean, and Apple Events Extensions and balloon help make it a System 7 Savvy product. Put macros into a menu so they work like a part of the application. QuickTimer activates macros at pre-set times and dates. With QuicKeys extensions you can write your own functions, or import specially written extensions for your favorite applications. **UTI0188** ***FaxFACTS 6529***

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(Avery Dennison) Solves the problems of finishing your desktop publishing project. This fully automatic desktop binding system replaces complicated equipment, tedious hole punching, alignment and plastic prongs. Combines advanced thermal technology with the abiltiy to bind ten documents at once, in seconds. **ACC0589** ***FaxFACTS 1010***

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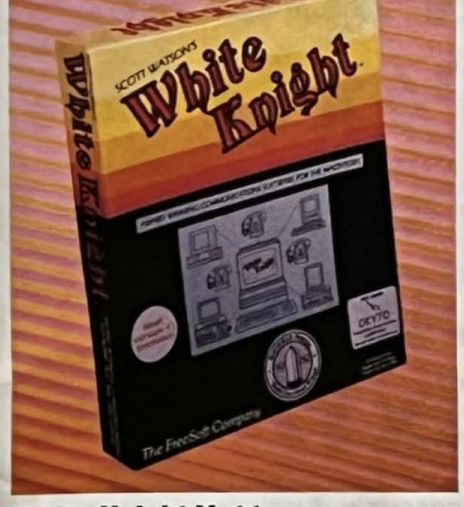
FileGuard 2.7

(ASD Software) "It's sleek, fast, and safe. I highly recommend it." MacUser April, 1991. Protect your Hard Drives and Partitions from unauthorized access (including security bypass with a system diskette), copying and erasure; Applications and File/Folders (including system folder) from unauthorized access, deletion, and/or illegal copying; Desktop (including system folder) from alterations by unauthorized user; Keep an eye on System Usage with the system users log which continuously tracks user/group activity. System 7.0 compatible. **UTI0135** ***FaxFACTS 6806***

MacUser Rating 4/91

FolderBolt

(Kent Marsh) "FolderBolt compliments the desktop...Subtle yet sensible...Takes the edge off security...Redefines standards." MacTutor July 1991. Simply shift-click to create completely locked folders, read-only folders, or drop folders. Once locked they can't be opened, duplicated, deleted or moved until you double-click & provide the password. Features complete unlocking at start up, activity logging, and locking at shutdown. Includes full administrator override. FolderBolt is a welcome addition to the Mac security arsenal MacWeek June 1991. The only desktop security that's System 7 Savy. **UTI0212** ***FaxFACTS 6549***



White Knight V. 11

(FreeSoft) This 11 award winning communications software is the successor to the Legendary Red Ryder software. The "new features" list is 20 pages long and includes: A reworked user interface, with completely reorganized menus. Enhanced terminal support, with support for the VT-102 added. White Knight supports the new ZModem protocol, as well as more versions of XModem, YModem and Kermit. It works properly with Multifinder, and supports both color QuickDraw and large monitors. **COM0060**
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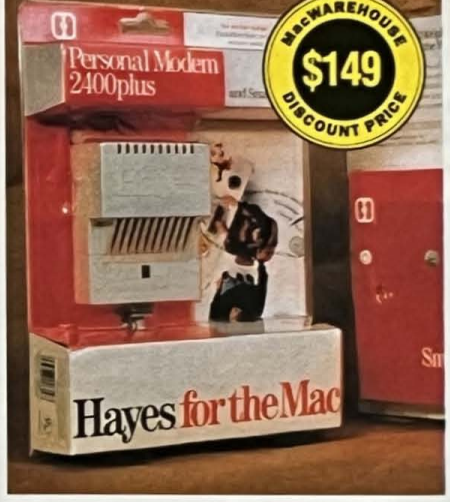

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(Hayes) Provides you with everything you need to go on-line. This 2400 baud modem has a built-in call-monitoring speaker and two LEDs, plus both phone and computer cables. Included in the package is the Smartcom terminal software to make using your modem simple and convenient. It fully supports the Mac interface. It also emulates popular terminals, such as TTY and VT54/102, to make mainframe and mini access easy. File transfer protocols include XModem, YModem, and MacBinary. Smartcom even allows you to automate log-ons. **MOD0060** ***FaxFACTS 5100***

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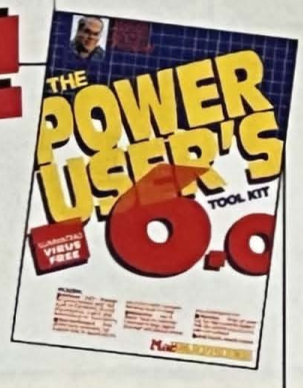

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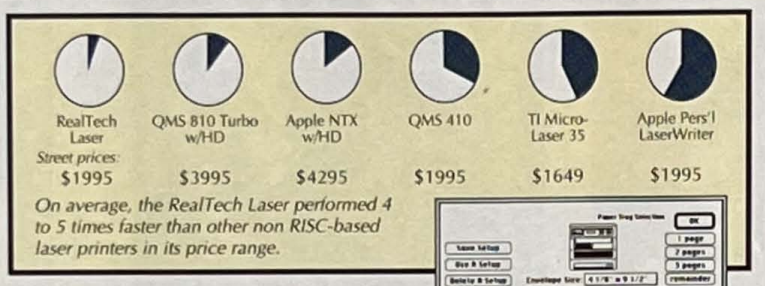

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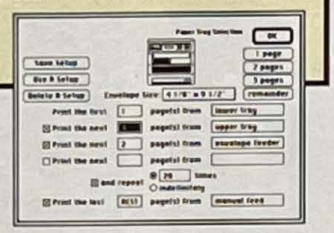

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$9975 Mac IIfx w/ one Floppy Drive, 8Mb RAM, 210 Mb Internal Hard Drive, Ikegami 24-bit 19" Color Monitor and Video Card, MacPro Plus Keyboard

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CPU	Monitor	Price
Mac SE	Mono	$995
Mac II, IIcx, IIci IIx, IIfx, SE30	Mono GS 256	$995 $1479
Mac IIsi	Mono	$1059
Mac Portable	Mono	$1249

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CPU	Monitor	Price
Mac II, IIcx, IIci, IIx, IIfx, SE, SE/30	Mono	$579
Mac II, IIcx, IIci IIx, IIfx	GS 256	$1079
Mac IIsi, IIci	GS 16	$495
Mac Portable	Mono	$849

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System	Colors	Price
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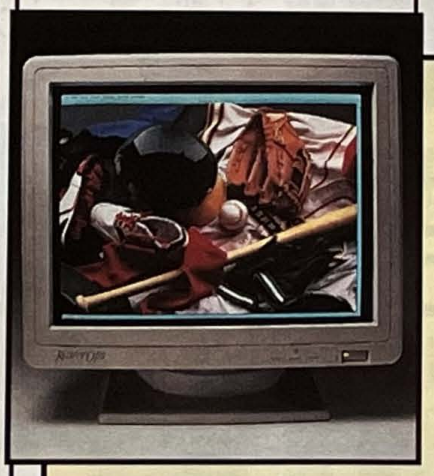

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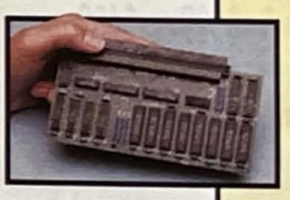

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170	*Pro-170s*	499	589
210	*w/WriteCache™*	659	749
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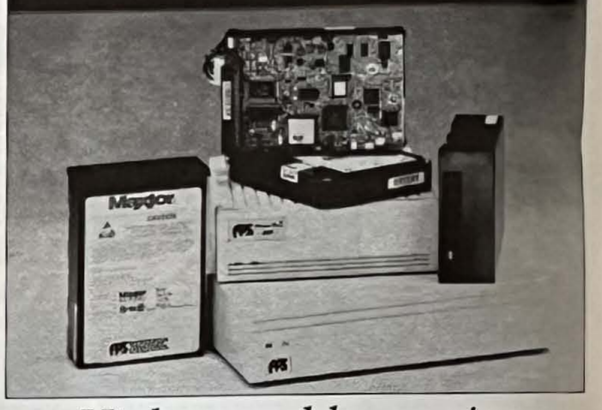
Just ask away. *When you phone, you have a right to expect courtesy, logic and a helpful attitude. Many people ask us questions about hard drives, SCSI addresses, termination, etc. We may not know all the answers, but we'll try to find any we don't have. If you decide to place an order, that's nice too.*

Maxtor 213 MB $599



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MB	INTL	EXTL
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213	599	689
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760	1649	1799
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330	1399	1549
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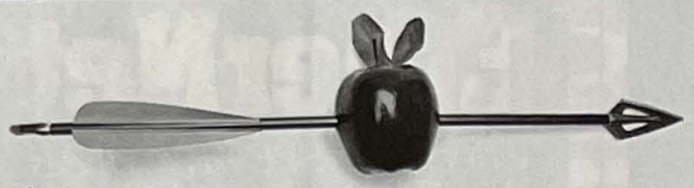

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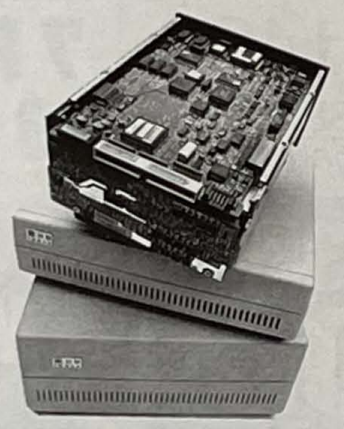

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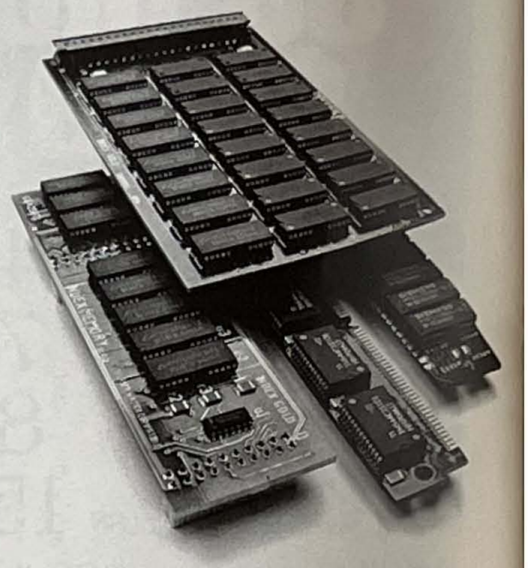
- 4 Mb surface mounted SIMM, 80 ns, (IIcx, IIci, IIfx, IIsi and LC) $145



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Index Hard Drives

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425 Mb, 12 ms	$1449	$1529

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*Mac II and IIx only

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Index extended keyboard

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NEW
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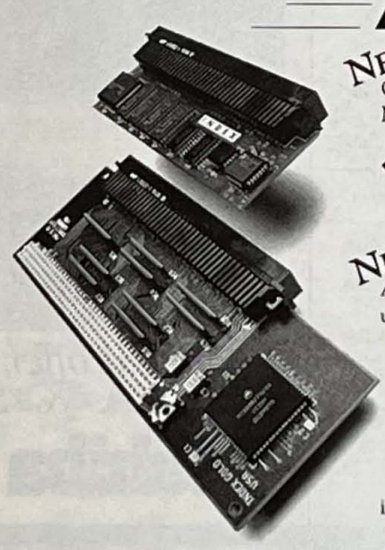
Accelerator Boards



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24. Computer Consultant
99. Other Businesses & Services (please specify) _____

2 Your Professional Title:

(Select one only.) Write Answer Here ➨ ☐

A. Chairman/President/Owner/Partner
B. VP/Controller/Treasurer
C. General Manager/Director
D. Micro Manager/Specialist/Coordinator
E. Project Manager
F. Art Director/Graphic Designer/ /Artist/Illustrator
G. Manager/Supervisor (not listed above)
H. Architect/Engineer
I. Systems Analyst/Programmer
J. Consultant/Advisor
K. Scientist
L. Educator
M. Editor/Writer
N. Professional (Doctor,Lawyer, etc.)
O. Accountant
P. Representative
Z. Other (please specify) _____

3 Your department/function at this location:

(Select one only.) Write Answer Here ➨ ☐

A. Engineering/Systems Engineering
B. Research & Development
C. Communications/Publishing/Public Relations
D. Art/Creative Design
E. MIS/DP/Information Systems
F. Manufacturing/Operations/Production
G. Sales/Marketing
H. Administration/Management/Personnel
I. Accounting/Finance
J. Education/Training
K. Science
L. Consulting
Z. Other (please specify) _____

4 Are there Macintoshes or other PCs listed below owned and/or planned for purchase within 1 year at this location?

☐ Yes ☐ No

			Currently Owned (Quantity)	Plan to Buy (0-12 Months) (Quantity)
MODULAR	68030 Macintosh IIfx / IIci / IIcx / IIx	3		
	68030 Macintosh IIsi	4		
	68020 Macintosh II / LC	5		
	68000 Macintosh Portable	6		
COMPACT				
	68030 Macintosh SE/30	7		
	68000 Macintosh Classic	8		
	68000 Macintosh SE / Plus / 512	9		
OTHER				
	IBM/Compatible Micro	10		
	Workstation (e.g. Apollo, Sun)	11		

Please remember to sign and date the form.
All questions must be answered completely, and be sure to provide specific numbers where requested.
The publisher reserves the right to limit the number of free subscriptions. Thank you.

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5 If your firm's primary business at this location is retailing, reselling or consulting, how many Macintoshes are sold per year?

(Answer one only.)

A. Retailer: sold per year _____ (specify quantity)
B. Reseller: resold per year _____ (specify quantity)
C. Consultant: purchased by your clients through your firm's recommendations per year _____ (specify quantity)
☐ D. Not Applicable

6 Please check the Mainframe(s) or Minicomputer(s) at your location:

(Check all that apply.)

☐ 01. VAX ☐ 02. IBM Mainframe ☐ 03. IBM Minicomputer ☐ 04. Other ☐ 09. None

7 Do you purchase, recommend, specify or approve any of the Macintosh/Compatible products listed below?

☐ Yes (If yes, check all that apply): ☐ No

Computers
☐ 01. Macintoshes
☐ 02. Workstations
☐ 03. Minis, Mainframes

Connectivity
☐ 10. Local Area Networks
☐ 11. Modems
☐ 12. Micro/Mini/Mainframe Links
☐ 13. Communication Software

Peripheral Equipment
☐ 20. Laser Printers
☐ 21. Color Printers
☐ 22. Color Monitors
☐ 23. Hard Disks
☐ 24. Backup Systems
☐ 26. Scanners
☐ 27. Input Devices
☐ 28. Removable Storage

Add-In Boards
☐ 40. Memory Boards
☐ 41. Graphic Boards
☐ 43. Ethernet Boards
☐ 44. Video Boards

Software
☐ 50. CAD/CAM
☐ 51. Graphics
☐ 52. Desktop Publishing/Fonts
☐ 53. Desktop Presentation
☐ 54. Database
☐ 55. Programming
☐ 56. Accounting, Payroll
☐ 57. Spreadsheets
☐ 59. Project Management
☐ 60. Word Processing
☐ 61. Utilities
☐ 62. Multimedia

8 If you answered yes to the above computer products, for how many Macintoshes do you have this involvement?

(Select one only.) Write Answer Here ➨ ☐

01. 1000+
02. 500-999
03. 100-499
04. 50-99
05. 20-49
06. 10-19
07. 1-9
09. None

9 Please indicate the communications capabilities that the Macintoshes at your location have:

(Check all that apply.)

☐ 01. Local Area Network
☐ 02. Communicate with corporate workstations, mini or mainframe computers
☐ 03. Communicate with remote mini or mainframe computers
☐ 04. Communicate via modem
☐ 05. Voice/Data
☐ 09. Other (please specify)

10 Indicate how many employees there are in your entire company:

(Select one only.) Write Answer Here ➨ ☐

01. 1000 or more 02. 100-999 03. Under 100

11 Indicate an additional individual at this location who might qualify for a FREE subscription to MacWEEK:

Name _____

Title _____ Dept. _____

•

Your Signature _____

Title _____ Date ___/___/___

PLEASE BE SURE THAT ALL QUESTIONS ARE ANSWERED.

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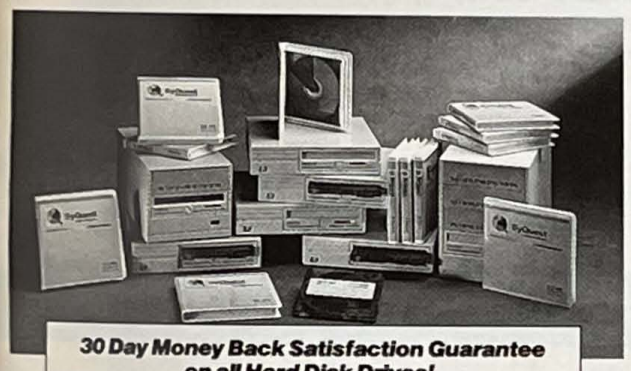

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$1,749

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$36

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$42

Qume CrystalPrint Express
$2,995

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- 12ppm
- 32bit RISC Processor
- 600x300 Resolution
- (2) 250 sheet trays

Monitors

E-Machines T-16/8 Bit Bundle		**$1895**
Sony 1304 14" Trinitron Color	**SPECIAL!**	**$599**
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Seiko 14" Trinitron Color		**$449**
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- Incredibly fast! These drives are the quickest 3.5" we have tested
  - 4,400 RPM Rotational speed
  - 5 MB/s Data transfer rate (sync)
  - 256K Data buffer for incredible throughput speeds!
  - 9ms effective access time, 3ms track to track access
- 5 year warranty! 200,000 Hours Mean Time Between Failure! (That is 22.89 years of continuous 24 hour usage!)
- Support A/UX, System 7
- All 3.5" External cabinets include a 40 watt power supply,

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- Transfer rate 4.8 Sync, 2.0 assync
- Average access time of 11.5 (1 Gig)
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- External 5.25" Drives incl. 65 w. power supply, cables, and ext. terminators

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45 mb	3.5" Low Profile/Low Power3yr warr, 50,000MTBF	$198	$258
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* Mean Time Between Failure is the average life expectancy of a drive.(In case of a 200,000 MBTF, this means a potential of **24 years** of 40 hour weeks, 52 weeks per year!)

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Q 210MB 3.5"	$688	$748
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JX-9500PS 35Fonts.....$1599.00

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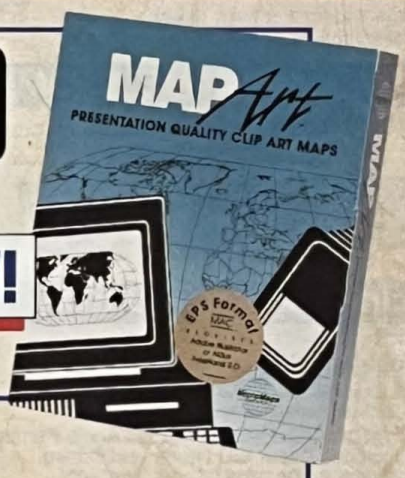

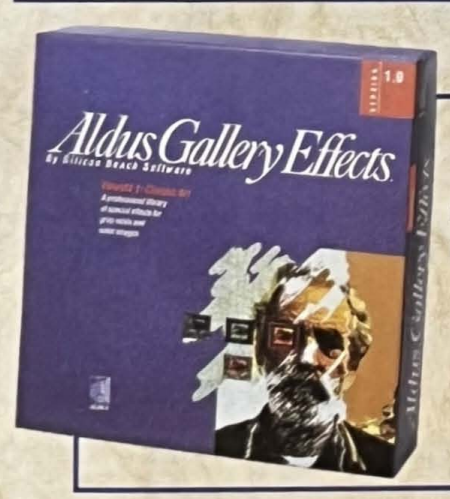

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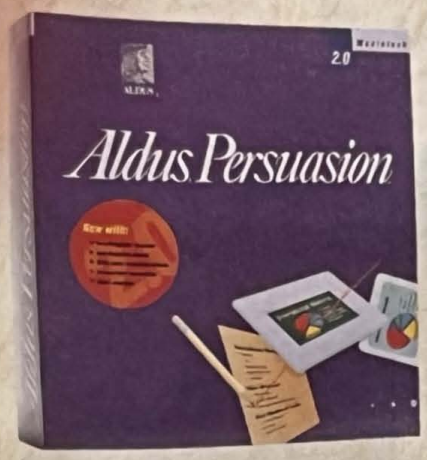

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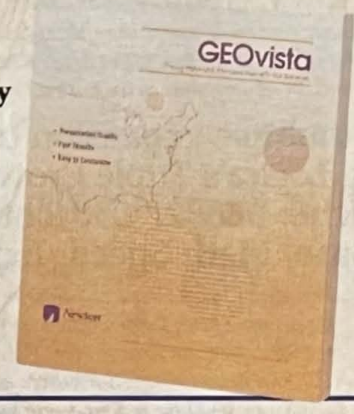

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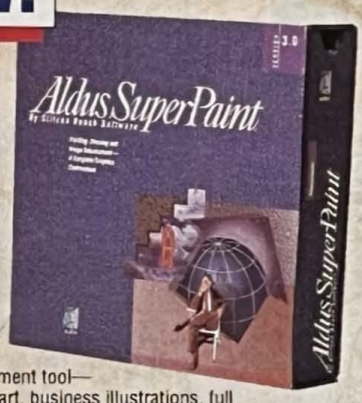

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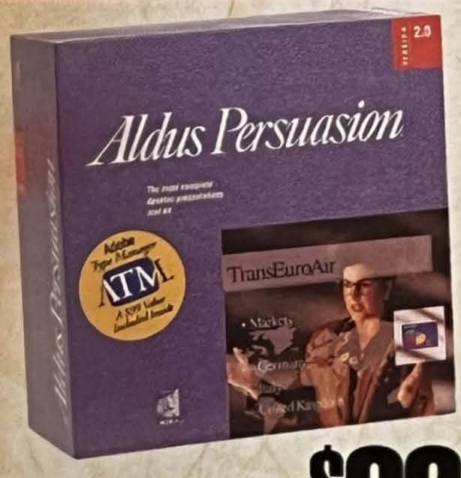

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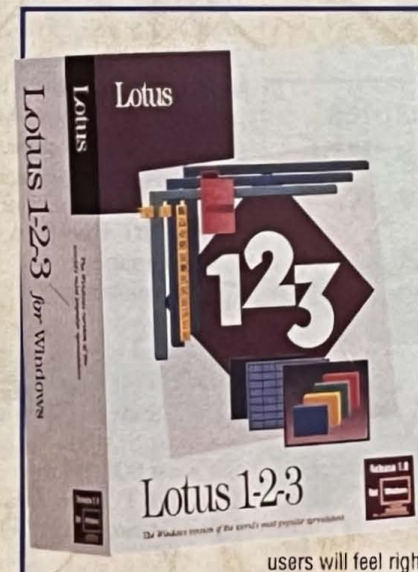

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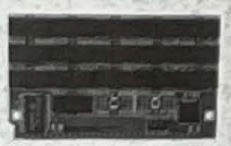

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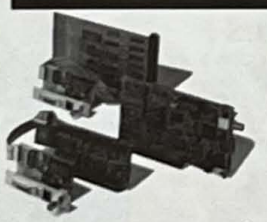

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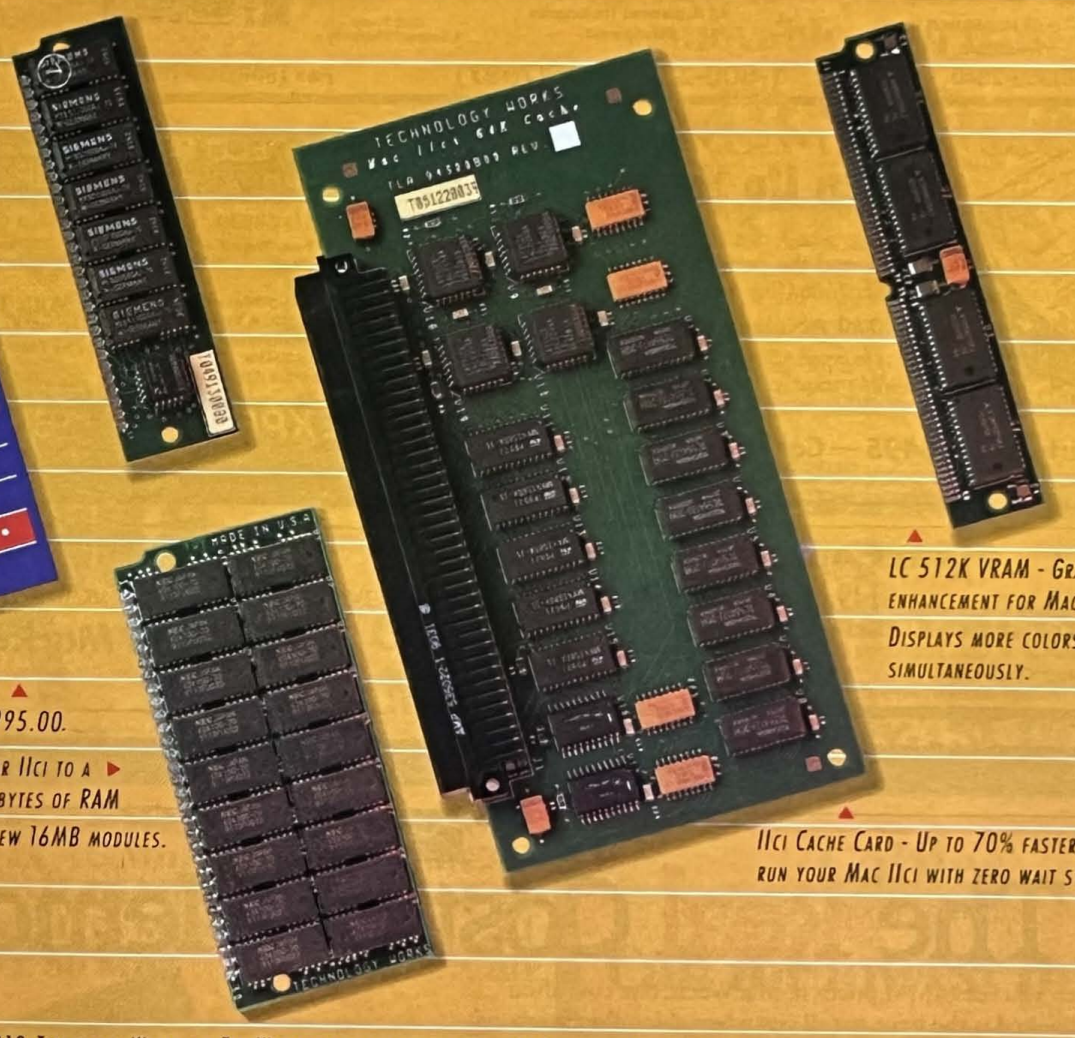

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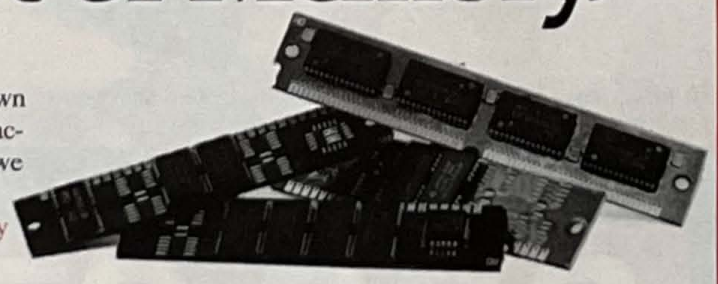

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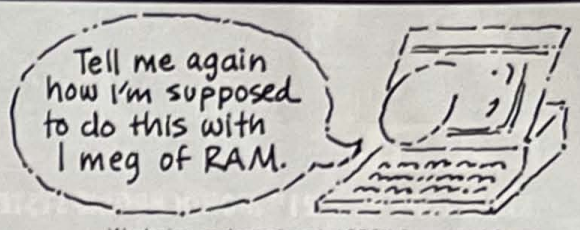

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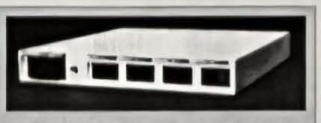

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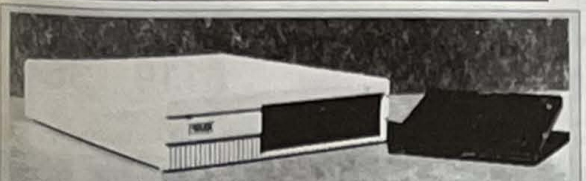

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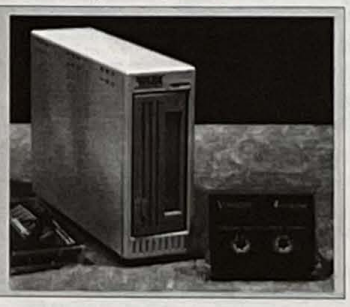

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Cartridges have a ONE Year Warranty

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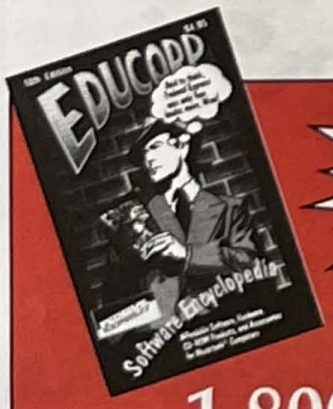

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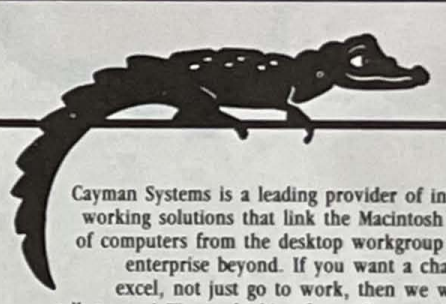

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BUSINESS WATCH

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RasterOps' stock takes a tumble after revenue shortfall announced

By Andrew Gore

Santa Clara, Calif. — Investors bailed out of RasterOps Corp.'s stock last week after the company announced that its first fiscal 1992 quarterly results will fall short of projections, but company President Kieth Sorenson said Wall Street overreacted.

The rout of investors caused RasterOps' stock price to tumble almost 45 percent. It closed at $13.50 a share Oct. 9, after two weeks of the heaviest trading RasterOps shares have seen since the company went public last year.

First-quarter revenues are expected to be about $19.4 million, down slightly from the previous quarter.

Earnings also will drop slightly although all first-quarter 1992 results are expected to be up from first-quarter 1991 (see chart below).

"A 10 percent shortfall in sales in one quarter while the whole industry is down is not a big hit," Sorenson said. "Investors have absolutely overreacted to the news."

The shortfall was caused by slow sales in Europe, Sorenson said. Thirty percent of RasterOps' total sales are in Europe; the continent accounts for three quarters of its overseas sales.

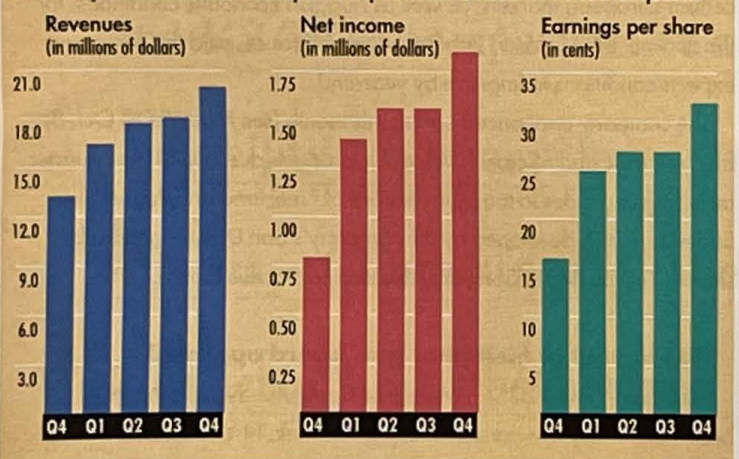
Some financial analysts said they felt RasterOps' stock was overvalued and has been due for an adjustment. But Sorenson said that his company's track record of consistently making projections caused investors to believe RasterOps was recession-proof.

"There are people who say the stock is overpriced, but if you look at the earnings per share, I don't think that's true," he said.

Sorenson predicted that a number of other major developers would also be announcing revenue shortfalls because of the worldwide recession (see story, Page 100). Sorenson said that RasterOps' setback should be temporary. □

RasterOps' track record

Quarterly results since RasterOps went public in its fiscal 1990 fourth quarter



After another strong quarter, Symantec plans stock split

By Shawn Tomlinson

Cupertino, Calif. — Shortly after the end of what analysts expect will be another in a long line of strong fiscal quarters, Symantec Corp. stockholders approved a two-for-one split of the company's shares.

The stock split will give each stockholder an additional share of stock for every one they owned as of Oct. 4, the split's effective date. The vote came at the annual stockholders meeting earlier this month in Palo Alto, Calif.

"Symantec has become very attractive to investors because of its products and business practices, such as purchasing Peter Norton Computing Inc.," said John C. Maxwell, principal of SoundView Financial Group Inc., a financial analysis company in Stamford, Conn. According to Maxwell, what investors are most impressed with is the fact that Symantec's earnings per share have grown significantly

See Symantec, next page

Baby Bells OK'd for on-line services

Phone companies entering data market

By Jeff Ubois

Washington — In a controversial decision last week, the U.S. Court of Appeals here cleared the way for the seven regional Bell companies to begin selling electronic information services such as stock quotes, advertising, news reports and electronic Yellow Pages.

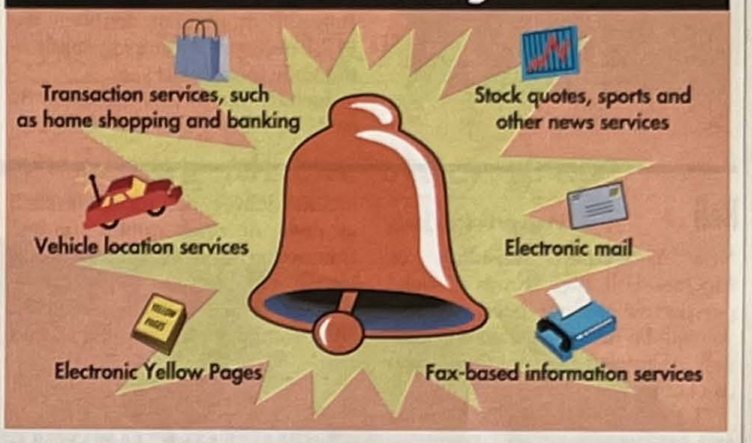
The Bell companies, which have been prohibited from owning information services since the 1984 breakup of AT&T Corp., hailed the ruling as a major victory. "This is a major step forward for American consumers, American business and the American economy," said Ronald Stowe, Pacific Telesis Group's vice president of Washington operations.

But other special interest groups, citing antitrust concerns, were quick to criticize the decision. The American Newspaper Publishers Association, the National Cable Television Association and the Consumer Federation of America argued that the ruling was likely to result in decreased competition and increased prices. Companies such as CompuServe Inc., an information service provider, vowed to continue the fight in appeal proceedings and in the U.S. Congress (see story, Page 100).

Industry analysts were divided on the ruling's likely effects. "If I were a residential computer user, I'd be happy; if I were a business user I'd be apathetic; but if I were an average citizen, I would be alarmed," said Greg Mesniaeff, an analyst at Northern Business Information, a

See Bell, next page

RBOC's information offerings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Trio ready to tout multimedia wares

By Carolyn Said

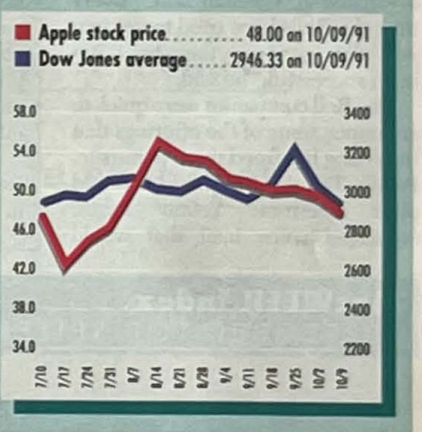
San Francisco — When the multimedia revolution finally hits, there will be plenty of companies ready to sell their wares. A trio of well-known multimedia professionals recently embarked on new media ventures.

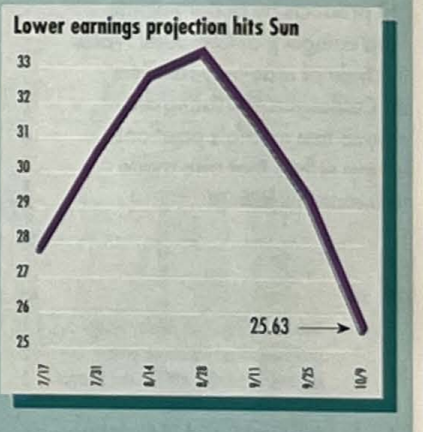
- **Trip Hawkins,** founder and chairman of Electronic Arts in San Mateo, Calif., will head a new company called SMSG Inc., to be based in San Mateo, that will help entertainment software companies take advantage of the multimedia market. SMSG is receiving funding from media conglomerate Time Warner Inc.
- **Alvy Ray Smith,** co-founder of Richmond, Calif.-based Pixar, has launched Altamira Software Corp. To be funded by Autodesk Inc. of Sausalito, Calif., the company will be based in Mill Valley, Calif., and will develop desktop color-imaging applications based on IceMan, Pixar's system-level imaging technology, which Smith initiated.
- **Steve Arnold,** formerly vice president of the New Media Group at LucasArts Entertainment in San Rafael, Calif., has become president and CEO of Interactive Home Systems Inc. Founded in 1989 by Microsoft Corp. CEO Bill Gates, IHS' mandate is to develop digital image banks for works of art. □

StockWatch

	10.09.91 CLOSE	WEEKLY % CHANGE
Apple	48.00	-3.52
SOFTWARE DEVELOPERS		
Adobe	51.25	-3.53
Aldus	41.25	-5.17
Ashton-Tate	16.25	0.00
Caere	17.25	-6.76
CE Software	8.63	2.99
Microsoft	89.50	2.87
Symantec	61.50	-3.34
PERIPHERALS VENDORS		
CMS	3.25	-13.33
HP	46.38	-2.88
Mass Micro	1.00	6.61
QMS	24.25	4.86
Radius	6.88	0.00
RasterOps	13.50	-9.24
Sigma	7.00	3.70
STORAGE		
Conner	16.25	-10.96
Maxtor	4.88	-1.28
Quantum	10.38	-5.68
Seagate	7.50	-9.09
INDUSTRY INDICATORS		
Businessland	0.88	0.00
DEC	55.75	0.45
IBM	97.25	-3.83
Motorola	57.75	-1.49
Sun	25.63	-10.48
Dow Jones	2946.33	-2.20

Compiled by Nordby International Inc.





If bad news comes in threes then Aldus Corp.'s and Sun Microsystems Inc.'s earning shortfalls mark the end of such disclosures that started with RasterOps (see stories this page, Page 100).

Last week, a number of financial analysts said that Sun's fiscal 1992 earnings would fall short of projections. The workstation vendor's stock fell 10.5 percent for the week to close Oct. 9 at $25.63 a share.

Symantec

From previous page

over the last two years and are expected to continue to grow after the split.

Numbers for Symantec's second quarter, which ended Sept. 30, won't be available until late October, but according to Maxwell, this stock split indicates the company is doing very well.

Symantec had revenues of $38.3 million for the first quarter, ended June 30, more than doubling the $17.1 million the company made in the same quarter last year.

Income rose to $3.4 million, or 32 cents per share, over the $2.76 million, or 31 cents per share, Symantec posted in the first quarter of 1991.

At the same meeting, stockholders voted to step up the authorized common shares available to 50 million from the previous 20 million. They also voted to add 350,000 shares of common stock to Symantec's employee stock-option plan and 150,000 shares to the board of directors' plan.

A Symantec spokesman attributed the company's growth to the acquisition of Peter Norton Computing, giving it access to the vast PC utilities market, and to the introduction of Mac- and Microsoft Windows-based products during the year. □

Bell

From previous page

New York-based subsidiary of McGraw-Hill Inc. "From a social perspective it's not good because you will be denying access to channels of information to those who can't afford it."

"I think it is an excellent ruling and long overdue," said Lawrence Gasman, president of Communications Industry Researchers here. "It seems unreasonable to ban [the Bells] from something they can't monopolize — they will be competing among themselves and against offerings like Prodigy, which has IBM [Corp.] and Sears [Roebuck and Co.] behind it."

Information service providers such as CompuServe are worried about the decision because it means more competition, but they may be overreacting, Gasman said. "Every time the Bells have tried to get into new data services, they have not been successful," he said.

The Bell companies were quick to announce some of the offerings that the ruling has freed them to pursue. Pacific Telesis Group said it would offer electronic Yellow Pages, enhanced voice mail that would include delivery of information such as news or stock quotes; on-line transaction services, such as banking and shopping; and radio location services for lost or stolen vehicles. But company spokesperson Lou Gaviano said that timing on the offerings is uncertain. "We don't have things sitting on the shelf ready to roll out — we haven't even been allowed to do design or development," he said. □

Congress may restrict Baby Bells

The ink was hardly dry on a ruling allowing the regional Bell companies to provide information services before a bill that would restrict new Bell offerings from competing with existing services was introduced in Congress.

The Telecommunications Act of 1991 is divided into two parts: The first part would effectively end the Bells' monopoly on local service by allowing smaller companies to provide "the last mile" of copper wire between subscriber premises and the local switching office; the second part concerns information services.

Within its service area, each Bell company would be permitted to offer exclusive electronic information, such as Yellow Pages or stock guides, only if no competing company was present. The Bells also would be allowed to provide gateways to third-party information services.

Competing information providers would be guaranteed access to at least 50 percent of the homes and businesses in a given service area by the bill.

The new legislation was hailed by Gene Kimmleman, legislative director for Washington-based Consumer Federation of America, who said, "The bill would protect consumers from monopoly abuses while opening the door to full-scale, local telephone competition." — *By Jeff Ubois*

MacWEEK index
SEPTEMBER TOP SELLERS

The following shows the top 10 products by dollar volume and category at ComputerWare, a chain of Mac-only resellers in California. The listing also shows last month's positions of top sellers that also made this month's listing:

AUG	SEP	General apps
1	1	Microsoft Excel 3.0
2	2	Microsoft Word 4.0
3	3	QuarkXPress 3.0
4	4	Mathematica 2.0 Enhanced
5	5	Claris FileMaker Pro
6	6	Aldus PageMaker 4.01
7	7	FrameMaker 3.0
8	8	Caere's OmniPage 3.0
9	9	Symantec THINK C 5.0
10	10	Aldus Persuasion 2.0

AUG	SEP	Connectivity
1	1	Hayes V-series Ultra Smartmodem 9600
2	2	Abaton InterFax 24/96 modem
3	3	Cayman GatorBox CS
4	4	Farallon PhoneNET Connector 10-Pack
5	5	Farallon StarController Series 300
6	6	Asante MacCon +II ET
7	7	Global Village's TelePort/FAX
8	8	Shiva FastPath V
9	9	Software Ventures' MicroPhone II 3.0
10	10	SupraModem 2400

AUG	SEP	Hardware
1	1	Mobius 030 Two-Page Display System
2	2	Hewlett-Packard DeskWriter printer
3	3	Microtek ScanMaker 600ZS Color Scanner
4	4	GCC Business LaserPrinter Elite
5	5	Mass Micro's DataPak 40MB removable
6	6	GCC Personal LaserPrinter II
7	7	Mobius 030 One-Page Display System
8	8	Radius Color Display/19 color monitor
9	9	RasterOps 19-inch Business Color System
*	10	PLI Infinity 40-Mbyte removable drive

AUG	SEP	Graphics, multimedia
1	1	Adobe Photoshop 2.0
2	2	Adobe Illustrator 3.0
3	3	Deneba Canvas 3.0
4	4	Claris MacDraw Pro
5	5	Aldus FreeHand 3.0
6	6	MacroMind Director 3.0
7	7	Adobe Type Manager 2.0
8	8	Fractal Design Painter
9	9	Altsys' Fontographer 3.3
10	10	Electronic Arts' Studio/32

AUG	SEP	Utilities
1	1	Symantec's Norton Utilities for Mac 1.1
2	2	Fifth Generation's Suitcase II 1.2
3	3	CE Software's QuicKeys 2.1
4	4	Symantec AntiVirus for Macintosh 3.0
5	5	La Cie's Silver Lining 5.31
6	6	Berkeley Systems' After Dark 2.0
7	7	Now Utilities 3.0
8	8	Salient's DiskDoubler 3.7
9	9	Fifth Generation's Pyro! 4.0
10	10	Fifth Generation's DiskLock 2.0

**Didn't make top 10 last month.*

Business BRIEFS

Microsoft posts strong quarter, sales up 57%

Redmond, Wash. — Despite the economic slowdown and its break with IBM Corp., Microsoft Corp. just keeps raking it in.

The company last week reported a 64 percent jump in earnings and a 57 percent increase in sales for the first quarter of its 1992 fiscal year, compared with the same period last year. Net income for the quarter, which ended Sept. 30, totaled $144 million, or 75 cents per share, while revenues soared to $580.5 million.

Microsoft said its results were aided by strong sales of MS-DOS 5.0, in addition to continuing demand for Windows 3.0 and Windows applications. The company said more than 6 million copies of Windows 3.0 have been sold since it was released 17 months ago.

In anticipation of a strong report, investors had pushed up Microsoft's stock more than 10 percent in recent weeks, to a close of $89.75 before Thursday's earnings announcement.

Aldus announces earnings may be lower than estimates

Seattle — Aldus Corp. said last week that it expects revenue and earnings to be "below the financial community estimates" for the last quarter.

The company said it expects to report revenue of $38 million to $41 million and earnings per share of 34 cents to 38 cents for the third quarter. The report of final results is due Oct. 21.

The company blamed weaker-than-expected seasonal conditions in certain European markets, as well as sluggish economic conditions, for the decline. Bill McAleer, vice president of finance, said the company expects conditions to improve by year-end.

The company announced earlier this month (see MacWEEK, Oct. 8) five new Mac and Microsoft Windows products due to ship next quarter, including upgrades to the Mac versions of FreeHand and PageMaker. SuperPaint 3.0, developed by the company's San Diego-based subsidiary, Silicon Beach Software, shipped earlier this month.

IBM buyout of Metaphor gets board approval

Mountain View, Calif. — Metaphor Computer Systems Inc. has become a wholly owned subsidiary of Armonk, N.Y.-based IBM Corp. Metaphor stockholders approved the buyout on Oct. 3.

Metaphor will get to keep its name and its headquarters here. The subsidiary will focus on its Data Interpretation Systems (DIS), which puts a graphical user interface on IBM's text-based relational database software. This allows non-technical users to gain access to IBM's databases and write their own applications, without having to learn the database's language. IBM's own DIS efforts will now be consolidated under Metaphor.

Employees who worked in Metaphor and IBM's Patriot Partners object-based operating system joint venture will be given the option of staying with Metaphor or joining one of the new Apple/IBM joint ventures. These employees may work in the Taligent object-oriented OS company or the Kaleida multimedia group.

David Liddle is staying on as president of Metaphor, a company representative said. The possibility of Liddle filling the leadership role at Taligent is still a hotly debated issue between IBM and Apple, sources said.

All things being equal, they're not.

They're just about the same price. They're made by two very good companies. Yet, there's one thing that makes NEC's Silentwriter®2 Model 90 look much better on paper than the Apple Personal LaserWriter® NT. It prints your work up to 50% faster. Pretty amazing, considering all the other great things NEC's Silentwriter2 Model 90 can do. Of course, it's completely Mac and MS/DOS compatible. It also has screen fonts, a standard 2MB of memory, the ability to do envelopes and it prints the richest blacks you've ever seen. But, most importantly, the Silentwriter2 Model 90 comes with Adobe® PostScript®. So whether you're printing newsletters or flyers, sales sheets, stationery or shareholders' reports, you'll have thirty-five different typefaces to help you create the most dazzling documents possible. For product literature, call 1-800-NEC-INFO. NEC's Silentwriter2 Model 90. Take a close look and you'll find it has no equal.

*Apple Personal LaserWriter NT. $2,599**

*NEC Silentwriter2 Model 90 $2,495**

$100 Rebate available from selected NEC dealers. Offer good until 11/30/91.

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PC MAGAZINE EDITORS' CHOICE November 13, 1990 SilentWriter2 Model 90

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C&C Computers and Communications

NEC

Quadras

From Page 1

and improved on-board video, Apple rates their overall performance as 80 percent better than the Mac IIfx, sources said. But current versions of many applications, including such Mac mainstays as Microsoft Word and Excel, won't work properly on the Quadras, sources said, despite Apple's largest and most expensive developer seeding effort to date.

In addition, problems in Quadra firmware and system software will limit users' ability to exploit some of the machine's new technologies, particularly its faster NuBus and SCSI controllers.

▸ **Copyback caching.** One of the key differences between the '040 and the 68030 is in the design of their on-board caches. The '030 uses a writethrough design; in other words, cached information is also automatically copied to RAM. The '040 supports an option called copyback caching, in which data and instructions are written to RAM "only when necessary to make room in the cache ... or when explicitly 'pushed' by system software," according to an Apple Technical Note called "Cache as Cache Can."

Copyback caching helps give the '040 its higher speed, but it also presents a problem for software compatibility. Although Apple has lent out more than 200 Quadras to third-party developers for compatibility testing, about 15 percent of current Mac applications won't work on the Quadras with copyback caching active.

Apple will include a list of applications that require updates, complete with developer phone numbers. In many cases, including Excel, developers are expected to have patches ready. In other cases, such as Word, users will have to wait for a major upgrade before they will be able to run the program with copyback caching enabled.

To use these programs in the meantime, sources said, users will have to go to a new System 7.0.1 control panel called Cache Control and turn off copyback caching. That will slow the Quadras' performance down to IIci levels but guarantee compatibility with all applications that work on a IIci, sources said.

Cache Control settings apply to all applications; comparable control panels for third-party '040 boards let users shut off copyback caching for incompatible applications only.

▸ **NuBus 90.** The Quadras will be the first Macintoshes to support the NuBus 90 standard, which allows for NuBus transfer rates of twice the current NuBus' 10-MHz speed.

Unfortunately, the new standard was not fully established at the time the Quadra's application-specific integrated circuits (ASICs) were designed. As a result, NuBus cards supporting the 90 standard will be forced to transfer data at 10 MHz when communicating with the CPU; only communications between NuBus 90 cards can run at the higher rate.

▸ **SCSI.** The Quadra 900 has two high-speed SCSI controllers. But because Apple's SCSI Manager software can handle only eight SCSI addresses, users will remain limited to a total of seven peripherals, sources said. □

Built-in '040 FPU could slow some apps

One area in which application performance might decrease, rather than increase on the Mac Quadras, is in applications that use trigonometry-based floating-point math.

In the process of building an FPU (floating-point unit) into the 68040, Motorola took two-thirds of the instructions from its separate math chip, the 68882, out of the processor and into ROM. They must be loaded to the CPU, slowing performance of applications that use them.

Although few applications use the relocated instructions extensively, the ones that do are typically the type of programs that would justify purchase of a high-performance workstation, such as real-time 3-D walk-through programs. According to sources, most applications can be rewritten to avoid the problem.

NetWorld

From Page 1

Michael H. Spindler, Apple president and chief operating officer, and Ellen Hancock, IBM vice president and general manager of network systems, will discuss details of the companies' agreement at NetWorld this week.

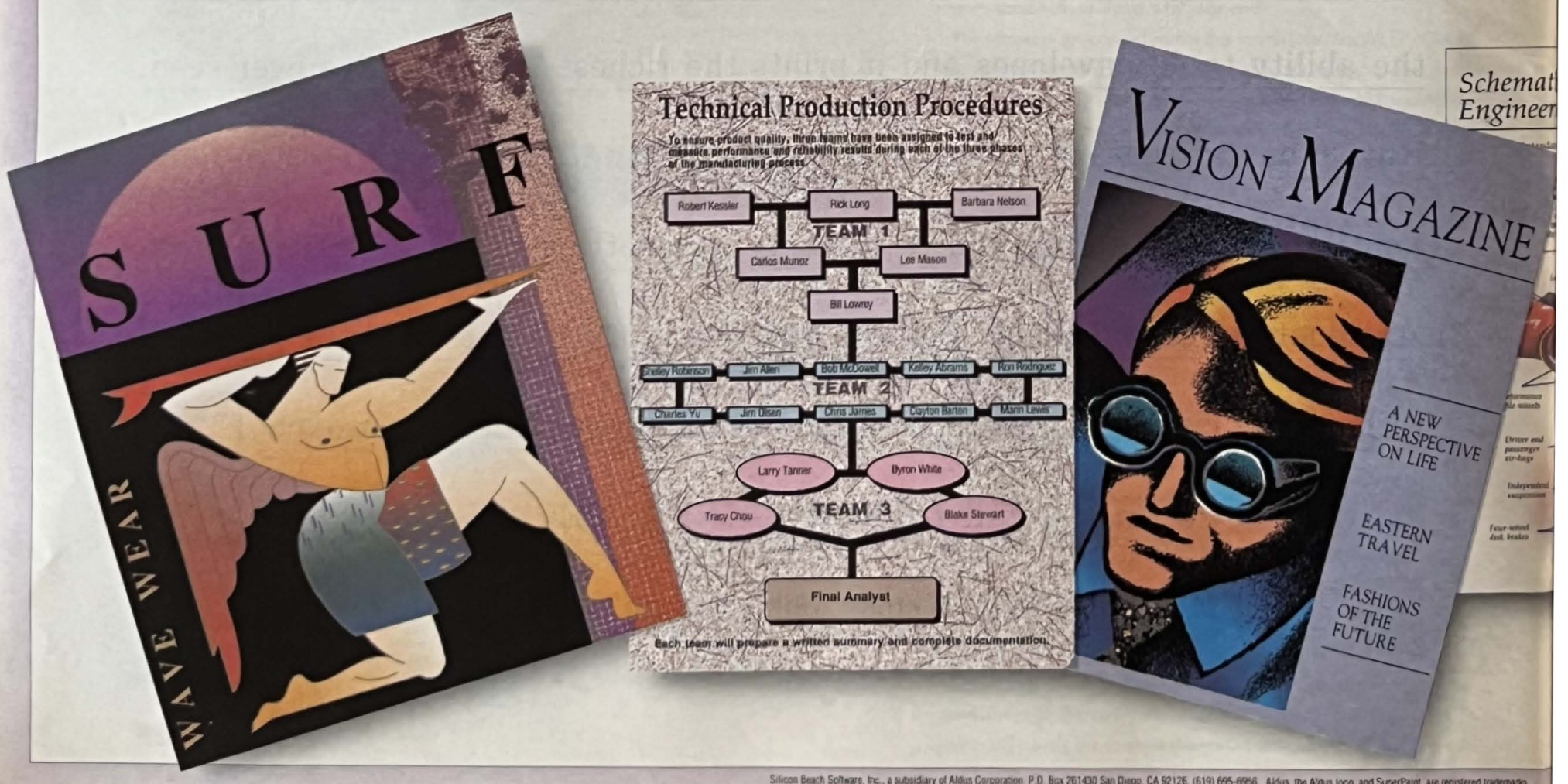
No matter which camp gets to market first or has the best network services, both will have to deal with Novell Inc. The Provo, Utah-based company today dominates the LAN market with about a 65 percent share. Although it recently acquired the DR DOS operating system for Intel-based computers, Novell has kept quiet about any plans it might have for keeping up with Microsoft and the Apple/IBM alliance.

For users with more immediate networking needs, NetWorld will yield a record crop of Macintosh products from the networking mainstream. Microsoft will introduce LAN Manager Services for the Macintosh, along with a slew of add-ons for its LAN Manager 2.1 network system (see story, Page 20). Banyan Corp. will unveil Vines 5.0, also featuring the company's first Macintosh connections; Novell Inc. will show its recently announced NetWare for Mac v3.01, which works with the company's top-of-the-line NetWare v3.11 server; and Apple's AppleTalk Remote Access and AppleShare Server 3.0 will make their debuts (see story, Page 20, and MacWEEK, Sept. 17).

Shiva Corp. and Cayman Systems Inc. will also be on hand to show prototypes of dedicated servers the companies are designing for Apple's new dial-in software.

Microsoft officials are also expected to discuss their support of the Open Messaging Interface (OMI) application programming interface (API). Although it was snubbed at the initial announcement, Microsoft said last week that it will support OMI along with its own E-mail API under Windows. Lotus Development Corp., IBM and Apple proposed the standard late last month (see MacWEEK, Oct. 1). □

It's a graphics program. It's a business program. Is not.



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PowerBooks

From Page 1

sumes well over 1 Mbyte, PowerBook buyers are expected to be eager for additional RAM.

But to add more memory users will need expansion cards that use a new and unusual type of RAM chip, as well as a non-standard connector.

▸ **RAM.** Memory is one of several areas where the PowerBooks break new ground in miniaturization. The machines use a kind of RAM called pseudo-static TSOPs, or thin small-outline packages. The chips are only about 1mm thick, and Apple will pack four of them, each with a capacity of 512 Kbytes, onto a 2-Mbyte memory-expansion card about the size of two postage stamps, sources said.

Apple reportedly will offer its 2-Mbyte card, manufactured for the company by Hitachi Corp., for $399; a 4-Mbyte card, expected to cost more per megabyte because it uses more advanced technology, will be limited in supply until early next year, sources said.

Third-party memory vendors, meanwhile, reportedly are scrambling for supplies. Hitachi so far is the only manufacturer producing TSOP RAM in volume, and Apple is "taking everything, every stinking little chip," said one frustrated third-party memory vendor.

One vendor, Technology Works of Austin, Texas, said it expects to have RAM available when any new Macintoshes appear, but supplies will be limited and prices relatively high until the second quarter of 1992. Smaller vendors may not be able to get supplies at all, sources said, and some vendors are expected to offer substitute technologies.

▸ **Connector.** Compounding the problem is a shortage of the miniature connectors required for the PowerBooks' RAM expansion slot. Harrisburg, Pa.-based AMP Inc. is the sole supplier of the connectors.

The connectors, which have pins packed twice as densely as in traditional chip connectors, are essential for PowerBook memory expansion: "That's how they achieve the high densities of circuitry in the PowerBooks: parallel circuit boards interconnected by these connectors," said one RAM vendor. "It plays a very integral part of the whole machine. It's impossible to make a card without it."

Several vendors said they have been unable to get more than sample quantities of the connectors. When MacWEEK attempted to place an order for 1,000 connectors through AMP distributor Hamilton Avnet Inc. of Sunnyvale, Calif., we were told that AMP estimated a delivery lead time of 80 days. □

Apple, Sony may conceive consumer devices

Potential alliance brewing in Tokyo

By Carolyn Said

Tokyo — Apple and IBM Corp.'s honeymoon had barely begun before Apple was setting its cap at a new partner: Sony Corp.

Apple CEO John Sculley, attending a multimedia trade show here last week along with Apple President Michael H. Spindler, confirmed that he is talking to Sony President Norio Ohga about a possible joint venture, the New York Times reported.

While probably not as broad-sweeping as the Apple/IBM alliance, an Apple/Sony venture would reportedly have a scope considerably wider than the companies' most-recent collaboration, the PowerBook 100. The new venture most likely would work on merging computer and consumer entertainment technology, a particular interest for Sculley.

The Apple CEO has been speaking publicly for months about a new generation of affordable, miniature and mobile consumer products that use interactive multimedia.

Devices such as a low-end Mac with built-in CD-ROM drives and hand-held computers capable of wireless communications are reportedly likely to be offspring of an Apple/Sony match.

Observers said that Sony and Apple bring complementary expertise to the union. "Sony's strength is in video and small electronics; Apple's strength is in user interface and good software for manipulating data types. That's a good match," said Denise Caruso, editor of the San Francisco-based Digital Media newsletter.

The potential new alliance also highlights the shifting landscape in the computer industry, experts said. "This is further evidence of the ongoing scramble in the industry for people to stake out alliances to help them survive," said Craig Cline, associate editor of the Seybold Reports in Malibu, Calif.

"The Sony deal is the ultimate hedge against the IBM deal," Cline added. "Apple is playing both ends against the middle with IBM and Sony, hoping that one way or the other, it will still be around in 10 years." □

Sixty Eight Thousand says: Dash the FX

Scotts Valley, Calif. — Why wait for a Quadra 900 when you can make your Macintosh into a fast '030-based tower today? That's what Sixty Eight Thousand Inc. is asking with the announcement of its Dash the FX upgrade program.

IIfx users can spend just $3,995 to have their machine converted into an $11,000 dash 30fx workstation with a 50-MHz 68030. The system is repackaged into a tower configuration with a 400-watt power supply, filtered cooling system and 8 Mbytes of high-speed dynamic RAM.

Options include a SCSI-2 controller that fits the system's processor direct slot and an expandable 33-MHz 68040 card with six NuBus '90 slots.

Sixty Eight Thousand Inc. is at 160 Technology Circle, Scotts Valley, Calif. 95066. Phone (408) 438-1777; fax (408) 438-2967. □

Is so. Is not. Is so.

New Aldus SuperPaint 3.0.

(Suggested retail price $199.)

Let's put this argument to rest. It's both. SuperPaint® is the all-in-one program that makes it easy to do it all—combining paint, draw, and image enhancement—saving you time and money.

As you can see, its range of capabilities makes it perfect for either business users or graphic designers. And now with the added color capabilities, EPS import and export, textures, and gradients, it gives you even more creative options (by the way, it still works great in black and white).

Of course, the best way to settle any argument over SuperPaint is to try it.

See your Aldus dealer or call 206-628-2320 for more information.

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The Creative Edge in Business.

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Taligent

From Page 1

Taligent, exactly as they would if they started up on a Mac."

When a user launches an application, Taligent's system software will know what Personality it should run under and will automatically set up the appropriate interface for the application.

Personalities are expected to be available for the Mac OS, AIX-A/UX and OS/2, Birss said.

▸ **Pure Taligent.** If all users are going to do is run their OS/2 and Mac programs on Taligent, then there is little reason for them to move to the new OS in the first place.

But what's most important about Taligent's object-based technology, Birss said, is that it will make it significantly easier to develop new programs that take full advantage of the new system, as well as customize generic applications.

"Taligent's mission is to make it easier to develop generic applications and for customers to customize the more generic applications," Birss said.

WILL MOSGROVE/APPLE

Ed Birss, vice president of Apple's object-based systems division and expected future chief operating officer for Taligent Inc., outlines how he sees Taligent's new OS working.

"We want Taligent to have a solid collection of objects so that new application categories can be developed that aren't possible now because they are economically unfeasible to develop and support," he said.

On current OSes, programs have hit a size where it becomes extremely difficult to add functionality, according to Birss. "No one programmer can have the whole design in their head," he added.

Under Taligent, objects become the smallest unit of a program, just as language commands are today. But an object can do far more than a command; it can even represent an entire subprogram.

"From an IS manager's prospective, Taligent will reduce the application development backlog they've seen piling up," Birss added.

A 3-D version of QuickDraw could be one example of a Taligent object. IBM or Apple could take such an object and make it a layer in their current operating systems. That approach would provide the additional functionality, but not the time savings and flexibility of a fully object-based system.

▸ **Licensing.** According to Birss, the pure Taligent OS will be available from Apple, IBM and Taligent, plus any third-party companies Taligent and its two parents choose to authorize. This could include any number of manufacturers that want to build Taligent platforms.

Where customers will be able to get Personalities for OS/2, A/UX-AIX and the Mac OS is for now much more problematic, however. Apple will almost definitely offer the Mac Personality with its Taligent-based machines, and IBM is sure to include an OS/2 Personality with its Taligent offerings. But it is unclear whether the two partners will be able to sell each other's venerable environments, much less whether third parties will get to include those Personalities. It hasn't even been established whether users can get Personalities anywhere but bundled with an Apple or IBM CPU, according to Birss.

"There are certain advantages that Apple and IBM as founders of Taligent would have," the Apple executive said. "What we want to do is provide an operating system that is widely available to customers worldwide. It's not our objective to foster a clone business."

Birss did say that Taligent would have access to all Personalities, and, under the guidance of Apple and IBM, would probably be able to sell them as part of its offerings.

▸ **Look and feel.** "Our goal is for Taligent to have the best of what's available from both IBM and Apple in terms of user interface, so that customers don't have to relearn how to use a Taligent-based machine," Birss said. Users familiar with the Mac or OS/2 should be able to use Taligent right out of the box, he said, but they will also notice many improvements and refinements compared with those environments.

As to the machines Taligent will run on, Birss said the new OS is ultimately scalable and will run on any machine with any processor that meets certain minimum design requirements. While Taligent may perform better on RISC (reduced instruction set computing)-based systems, he observed, it will be able to run on a wide range of machines, from entry-level consumer-oriented systems to high-performance server systems; some Taligent objects are even likely to find their way into IBM's mainframe systems. Processors that will be supported include Motorola Inc.'s 680x0 and Intel Corp.'s 80x86 families, as well as the PowerPC RISC chips being developed by IBM and Motorola.

"We also plan to be able to run [Taligent] on some of the machines shipping today," Birss said. "We want to run on the highest-volume platforms in the year we ship." □

Vellum

From Page 1

the precision is automatic.

"I use Vellum regularly to do all my drawing, since it is so much easier than a simple drawing program. The only reason I can think of to use a drawing program instead of Vellum 3D is the drawing program is cheaper."

Kathy Hale, senior CAD/CAM analyst with Dataquest Inc., a market research company in San Jose, Calif., said the program will bring in new users from the drafting and design world because "it approaches 3-D from the classic drafting angle of isometrics," a 2-D drawing technique that gives the appearance of 3-D perspective. "Now anybody who can work in isometrics can join the 3-D fold," Hale said.

Users sketching an isometric drawing in Vellum 3D are automatically creating a 3-D wireframe that Ashlar said is precise to 16 decimal points. Since the drawing is created in 3-D space, it can be viewed at any angle at any time. An on-screen trackball lets users rotate the model in real time. Users also can tell the program to display drawings in a variety of views, including front, top, side and trimetric, for preparing fully dimensioned blueprints.

The new Z-Drafting Assistant constantly informs users as their cursor approaches an object's endpoint, midpoint, tangents and other geometry, along the x, y and z axes. The Z-Drafting Assistant automates object alignment regardless of working plane, Ashlar said.

"Vellum 3D is definitely revolutionary, because I can draw in 3-D and look at the design in any rotated view, rather than having to work only in the drawing plane," said Burt Rutan, CEO of Solid Composites Inc. in Mojave, Calif.

"I can draw a full 3-D object, all dimensioned and to scale, while working in the isometric view," said Rutan, who used the original Vellum to design the Voyager aircraft that circled the world, as well as the fixed wing that helped skipper Dennis O'Connor win the America's Cup.

Other features in Vellum 3D include associative dimensioning, integrated parametrics and the ability to create 3-D objects by extrusion and rotational sweep. With integrated parametrics, users enter dimensions in 3-D, allowing them to sketch designs and set precise dimensions later. The program comes with a library of 2-D and 3-D symbols for parametric manipulation.

The initial release of Vellum 3D will be called Version 2.10 to match an update to Vellum, the 2-D program. The 3-D program will be priced at $2,245 until Jan. 31, and $2,495 afterward. The 2-D version will ship at the same time for $1,995.

The 2-D program now offers ordinate dimensioning and bubble labeling, along with parametric conditionals for manipulating objects using "if-then" statements. With a new Tracer Select feature, users can click in an area created by intersecting objects, and Vellum will automatically trace along the region's boundary for precisely calculating area and crosshatching.

In addition, Vellum now offers a movie function that lets users animate a mechanism's movement to show tolerances and clearances. All functions are also available in Vellum 3D.

Users of Vellum Version 2.0 or 2.01 can upgrade to Vellum 3D for $250 until Jan. 31, or $500 thereafter, and they can purchase the upgraded 2-D version for $50; users of Version 1.0 pay $545.

Ashlar Inc. is at 1290 Oakmead Parkway, Suite 218, Sunnyvale, Calif. 94086. Phone (408) 746-1800; fax (408) 746-0749. □

InterOp

From Page 1

tions fray with its rollout of the $1,099 ISDN (Integrated Services Digital Network) NuBus Card, due in November. The company also introduced Telephone Manager and ISDN Serial Tool software, both for the Macintosh Communications Toolbox. The software, which lets users control their phones through a Mac, will ship with the ISDN card.

Third-party vendors joined in Apple's ISDN presentation, showing applications that hook into the Telephone Manager.

For example, ISDN can provide Caller ID information that Northern Telecom Inc.'s TeleCenter can send to Shana Corp.'s Informed Manager. Informed Manager, in turn, can display a caller profile from the user's database, all without user intervention.

Group Technologies Inc. showed its Aspects, a real-time conferencing application, running on ISDN, which allows both voice and digital connections on a single call.

While ISDN does bring telephone services to the Mac desktop, when it comes to raw speed, it is one of the slowest horses in the networking race (see story, Page 23).

The InterOp horizon was dominated by cabling draped from the ceiling to connect the entire show on Switched Multimegabit Data Service (SMDS) and Fiber Distributed Data Interface (FDDI) networks, both of which outpace ISDN.

SMDS is a 1.544-Mbps technology that allows any user of the telephone network to access high-speed connectivity similar to routed traffic on a LAN. Mac users, for instance, could mount a hard disk across the country as though it were local.

Multiaccess Computing Corp. displayed its $2,999 MCC-1000 SMDS-Talk card and SMDSTalk router as part of InterOp's SMDS Showcase.

FDDI, a fiber-optic networking protocol that allows 100-Mbps metropolitan-area communications, also ran in InterOp's speed derby. A copper-based FDDI standard, now in the works, will allow users to run FDDI on phone wires in the future. □

DAVID SOREY

InterOp '91 provided a hard-wired sample of the digital and fiber-optic technologies that lie ahead for networking professionals. More than 30,000 people gathered in San Jose, Calif., for the event. Here, network cabling rains down on the crowded show floor.

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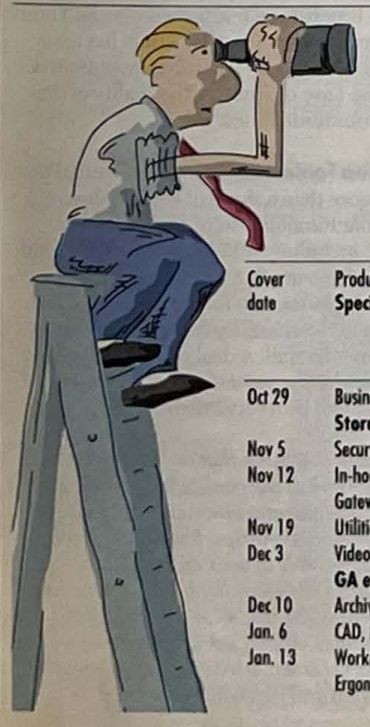

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Bad Apple, no PowerBooks

This is that special period just before the product introduction that rekindles warm memories of Christmases past. Everyone knows what's in the brightly wrapped boxes under the tree, but the excitement born of anticipation is overwhelmingly real nevertheless.

It was the least lucky of those children who opened their boxes only to discover that they contained IOUs. Alas, that might very well be the fate in store for the adult children currently looking forward to actually taking delivery on one of the new Mac miniatures. Late last week, dealers, who had been expecting to have at least one PowerBook on hand to use as bait when Oct. 21 rolls around, were notified that even that modest requirement was in jeopardy. Supplies, which were expected to be short, especially for the 140 and 170 models, may turn out to be nearly non-existent when the rollout rolls out.

There's nothing particularly novel about shortages of new CPUs, especially from Apple. (Anyone remember the situation with Classics last year?) As to the question of when the PowerBooks will be as freely available as, say, new Chrysler LeBarons, no one knows for sure. For dealers all of this means only one thing: The debut of the PowerBooks will not signal the end of this latest dip in the recession.

Sunny side up. Quadras, on the other hand, should be generally available at the moment of the announcement, as will the Classic II. While the expected volume of Quadra sales will be almost insignificant compared with the demand for the travel-ready trio, it will give dealers something to do. After all, a day of processing PowerBook order deposits does not a meaningful existence make.

The Knife is expecting at least one announcement concurrent with the Quadra unveiling that should be of particular interest to the prime Quadra audience. Almost by definition this group is composed of the power hungry and — after shelling out for several fully loaded Quadras — the budget-resource restricted. So a $350 accelerator package for the 68040-based Quadra that boosts raw performance by about one-third holds a lot of potential to create a stir.

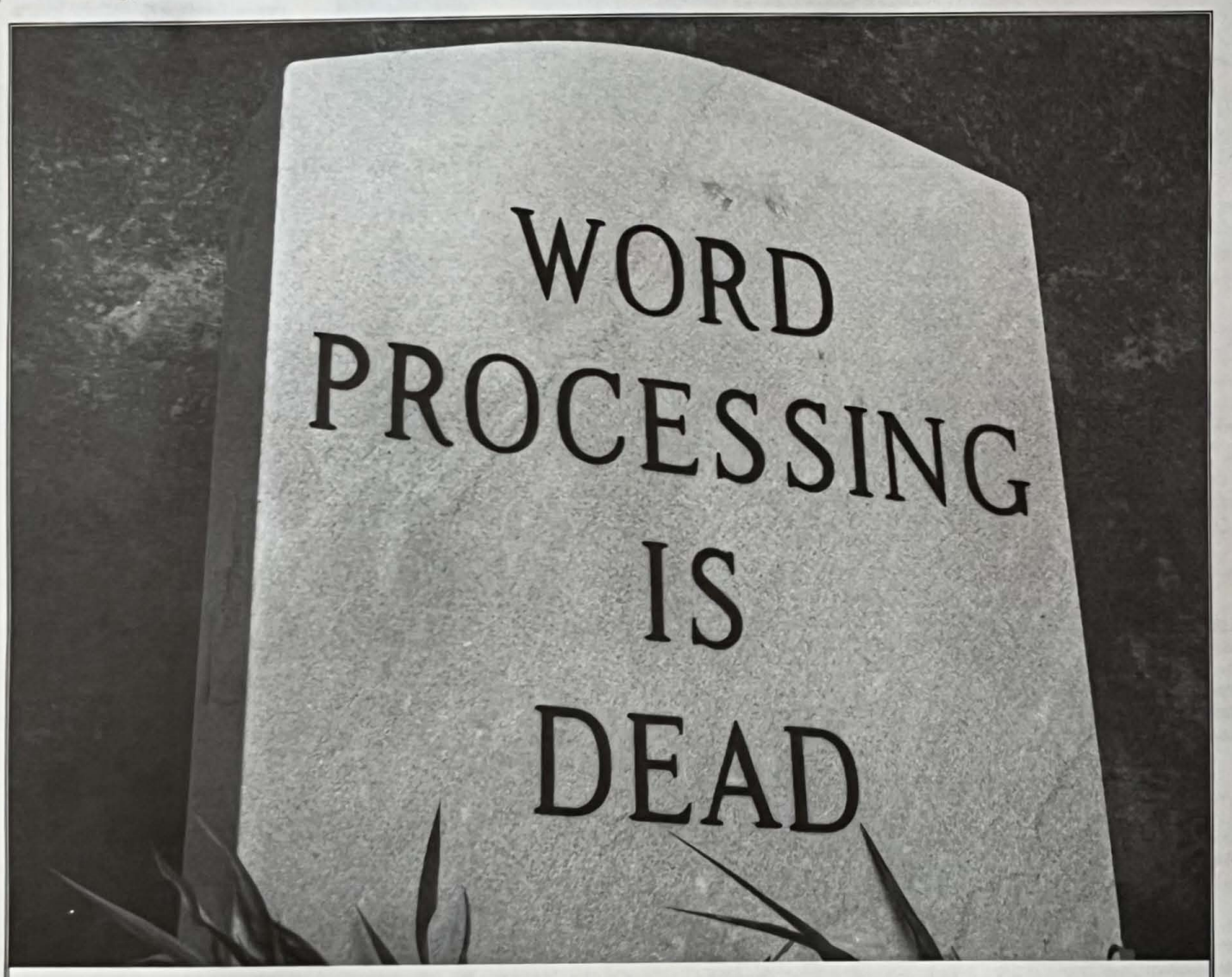
Forever stops here. With most of its customers' attention focused on new products and speculation about the next strategic alliance partner, Apple is poised to pull at least one more major surprise out of its hat this month. The Apple IIGS, the last in the long honorable line of Apple II stand-alone computers, is expected to cease production sometime very soon, possibly this month. The demise of the IIGS will mean that the only Apple II still in production will be the IIe card for the Mac LC.

Call waiting. Apple chose last week's InterOp '91 to introduce its new ISDN NuBus card. Those interested in finding Apple's booth first had to leave the San Jose Convention Center for the Diamond Pavilion across the street. Then they had to work their way through a maze of food-service facilities before reaching their goal.

Once the Apple booth had been found, attendees were greeted with the discovery that the new Telephone Manager, which controls the card, does not include support for plain old touch-tone telephone signals. This is a fairly good indication that Apple has a way to go before it catches up with the potential and, in the case of France, the reality of digital telecommunications.

Farallon follies. The Knife has learned that there is more than a shred of truth to those rumors that Farallon's suite of multimedia products, including its high-profile sound products, is on the market. Sources claim that the company is planning to focus its development efforts on networking, leaving others to blaze the multimedia trail. A deal with a multimedia-focused developer sometime before the end of the year would be a very safe bet. □

Just when you think that everyone understands the rules of the game, along comes a call or letter that indicates otherwise. Mugs are for those who share their tips. Share yours with the Knife and the odds of your owning a MacWEEK mug will be excellent. Contact the Knife at (415) 243-3500, fax (415) 243-3650, MCI (MactheKnife), AppleLink (MacWEEK) and CompuServe/Zmac. It's easier than a Senate confirmation and much more private.



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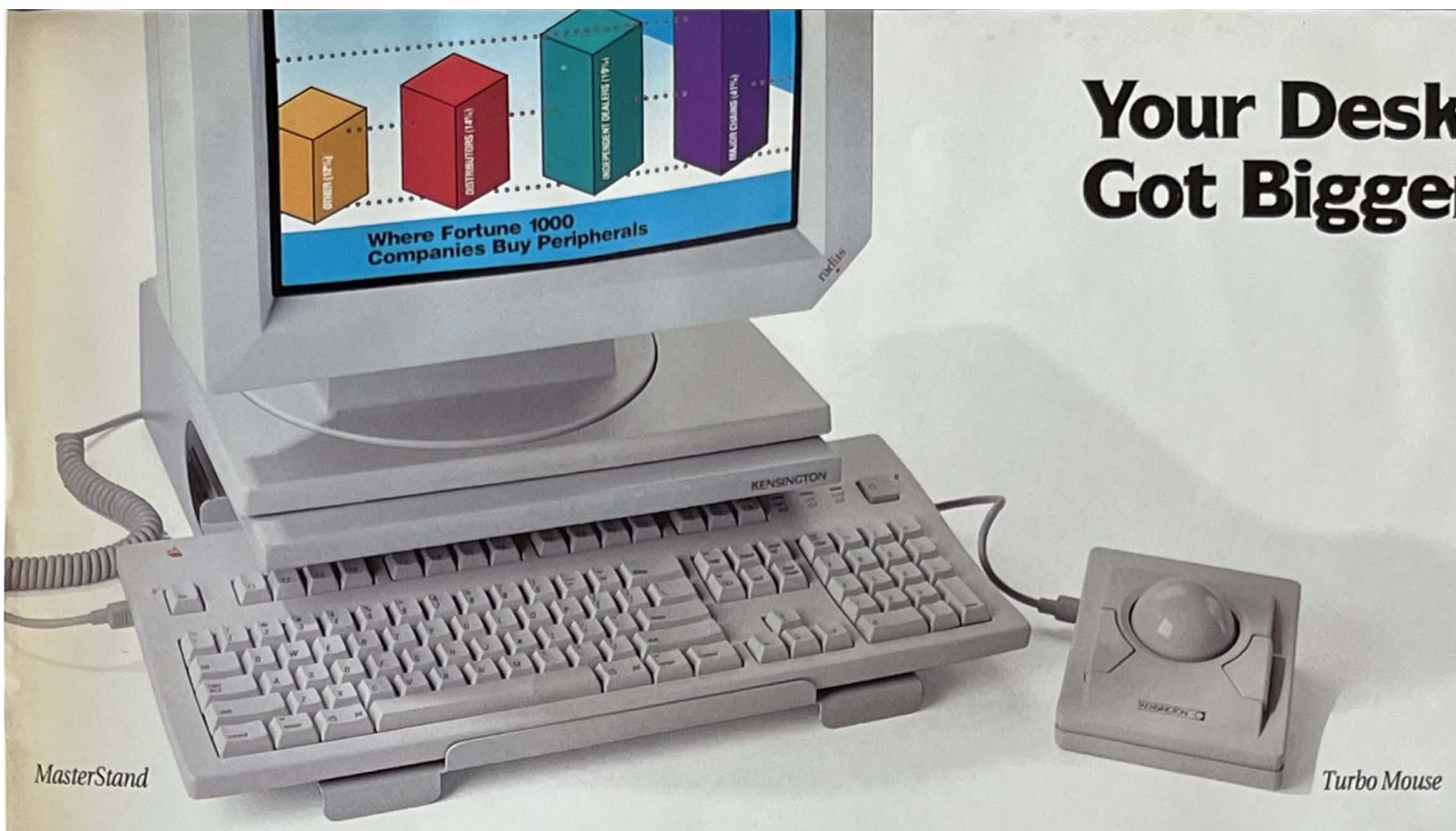

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PART 2

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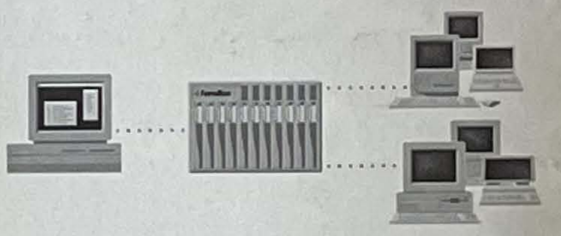

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